REPORT RESUMES

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A LIBRARY PROGRAM FOR COLUMBIA.

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PART OF THE PLANNING NECESSARY FOR THE NEW CITY OF COLUMBIA, MARYLAND (PROJECTED POPULATION OF 125,000) HAS BEEN THE ORGANIZATION OF AN OPTIMUM PROGRAM OF INFORMATION SERVICES FOR ALL AREAS OF ITS LIFE--BOTH FOR THE COMMUNITY IN GENERAL AND FOR ITS SCHOOLS, INDUSTRIES, AND BUSINESSES. COMMUNICATIONS, TECHNOLOGY AND RELATED SYSTEMS HAVE BEEN INVESTIGATED AND A GENERAL PLAN MAKING EXTENSIVE USE OF COMMUNITY ANTENNA TELEVISION SYSTEMS, CLOSED CIRCUIT TELEVISION, SHARED COMPUTER SERVICES, AND OTHER PROGRAMS, ALL ADMINISTERED BY THE COLUMBIA COMMUNICATIONS SERVICE AGENCY, HAS BEEN PROPOSED. VILLAGE LIBRARIES, WHICH ARE TO BE PLACED IN POPULATION AREAS OF APPROXIMATELY 3000 FAMILIES, WILL HAVE THE DUAL PURPOSE OF SERVING THE JUNIOR AND SENIOR HIGH SCHOOLS, AND BEING A BRANCH OF THE PUBLIC LIBRARY. ON THE OTHER HAND, THE TOWN CENTER LIBRARY MAY BECOME THE FOCAL CENTER FOR ALL LIBRARY AND COMMUNICATIONS SERVICES FOR THE TOWN. THE COMMUNICATIONS AGENCY WILL BE RESPONSIBLE, UNDER CONTRACT, FOR ALL BASIC LIBRARY SERVICES FOR BOTH THE VILLAGE AND TOWN CENTER LIBRARIES, AND FOR THE SCHOOL AND ACADEMIC LIBRARIES, INCLUDING CENTRAL PROCESSING, ADMINISTRATION OF PAPERBACK SALES, PROVISION FOR AUDIOVISUAL MATERIALS, AND ADMINISTRATION OF A CENTRAL SCIENTIFIC-TECHNICAL REFERENCE CENTER. (CM)

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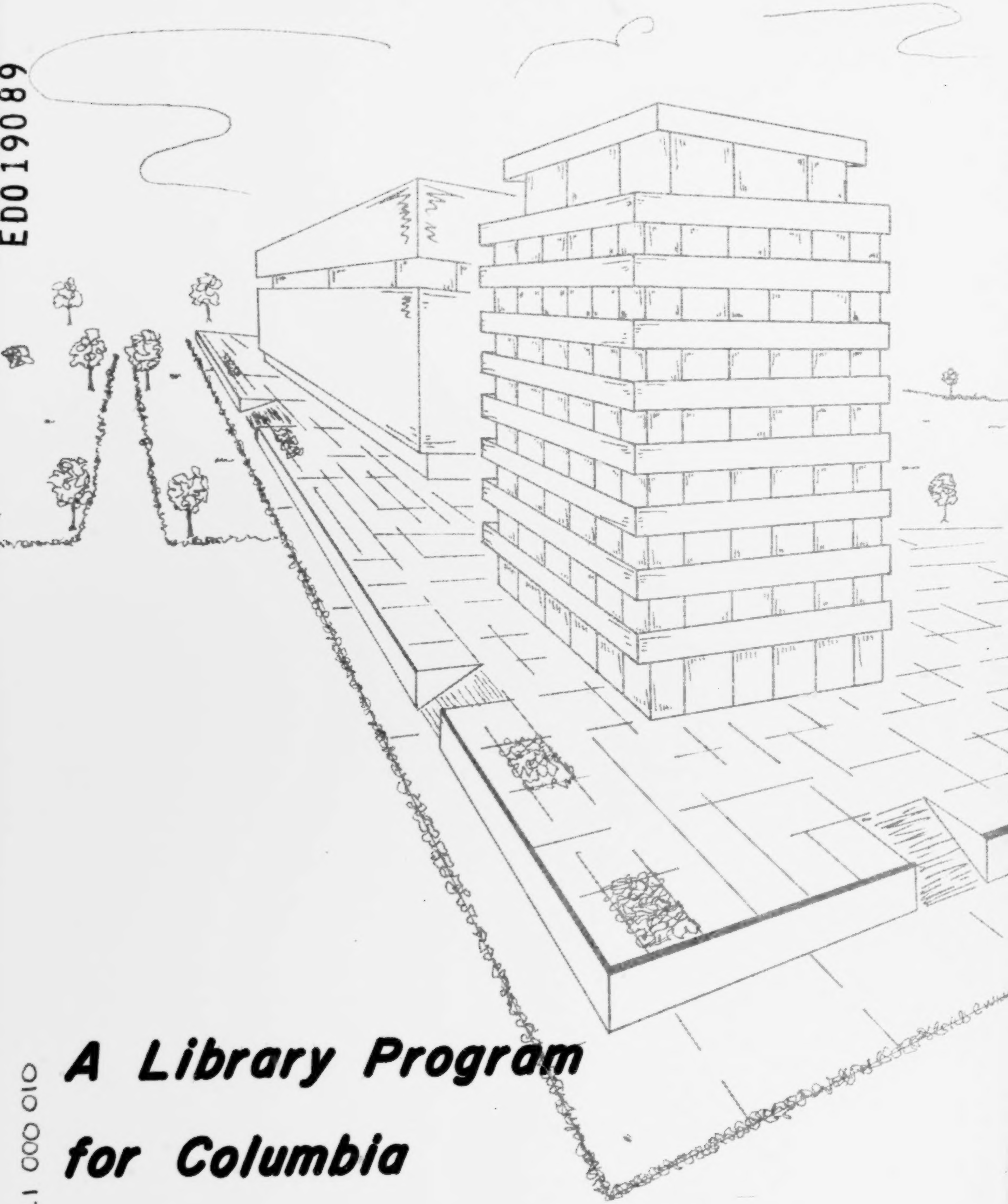

A Library Program for Columbia

LI 000 010

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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A LIBRARY PROGRAM
FOR COLUMBIA

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Pittsburgh, Pennsylvania October 15, 1965

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A special word of thanks is due each of the following:

Verner Clapp, President
Council on Library Resources

Mae Graham, Supervisor of Public Libraries
Division of Library Extension
Maryland State Department of Education

Nettie B. Taylor, Director
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Maryland State Department of Education

Marvin Thomas, Director
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Introduction

Faced with the prospect of planning and managing an optimum program of Library service for the new, planned city of Columbia, in the spring of 1965 the Board of Library Trustees of Howard County, Maryland authorized establishment of a special Committee on Library Service for Columbia. Chaired by Miss Nettie Taylor, Director of the Maryland Division of Library Extension, State Department of Education, the committee is made up of eight members including Mr. Marvin Thomas, Director of the Howard County Library, and Mrs. R. Neville Arrington, President of the Board of Trustees, Howard County Library. The full list of committee members follows this introduction.

Following detailed review of library-related problems and opportunities posed by development of Columbia City, the advisory committee sought funds to conduct a special study. After discussion and approval of an over-all plan for such a study, prepared by Dr. C. Walter Stone, the Council on Library Resources awarded a grant of $4,750 for completion of the work. Consultants recruited by Dr. Stone for special assignments included Dr. Philip Lewis, Director of Research, Development and Special Projects for the Board of Education of Chicago; Dr. Harold Goldstein of the University of Illinois, Graduate School of Library Service; Dr. Richard Darling, Supervisor of Library Services, Montgomery County Public Schools in Rockville, Maryland. Invited to assist preparation of the final report by reviewing recommendations in light of practical administrative problems and preparing an estimate of costs was Mr. Keith Doms, Director of the Carnegie Library of Pittsburgh.

As requested by the advisory committee, the bulk of work necessary to complete the study was undertaken during late August and early September. This work included intensive briefing of the consultant team on all aspects of the project during a three-day meeting held near Baltimore (August 7-9); the conduct of interviews with key personnel having an interest in the project (e.g. the County Librarian, Assistant Superintendent of Howard County Schools, representatives of the Community Research and Development Company--agency responsible for planning and development of Columbia--and preparation of individual reports. Special meetings in the Baltimore area were arranged for by Drs. Goldstein, Darling, and Stone. A final meeting of the consultant team was held in Chicago September 10-12 for purposes of detailed review of information gathered, revision of statements prepared by each consultant, and preliminary drafting of several sections of the final report.

Additional trips were made by the chairman to the Baltimore and Washington areas in late September.

Chief responsibility for preparation of the project report is that of the chairman.

While specific sections of the report are not credited to individuals, chief areas of project staff responsibility should be noted as follows:

Potential use of communications technology (Lewis)

School library service (Darling)

Public library service (Goldstein)

Background information; program recommendations (Stone)

After presentation of a special oral report to the Advisory Committee on Library Service for Columbia on October 8th, the report which follows was prepared for duplication and distribution.

C. W. Stone

Advisory Committee on Library Services in Columbia a Planned Community to be developed in Howard County, Maryland

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I.

Columbia City
(The Concept and Setting)

Representing the vision of James Rouse, leading mortgage banker of Baltimore and well-known builder of shopping centers, the Columbia City project offers a new approach to planning in urban communities. Managed by Community Research and Development, Inc. with a staff headed by William E. Finley, former director of the National Capital Planning Commission, as vice-president in charge of the project, the building of Columbia City has been made possible by the purchase of more than 15,000 acres of land with funds loaned by the Connecticut General Life Insurance Company. The location chosen for the new city was deliberately selected for its special characteristics including probable growth and movement of the population in relation to existing urban centers, available transportation routes, possibilities for optimum use of the land and creation of the equivalent to an international model or demonstration of what urban design should and can be.

Planned for development over a 15-year period, the proposed limits of the city will cover an area of approximately 22-1/2 square miles and will accommodate by 1980 a population of approximately 110,000 to 150,000 residents living in some 29,000 homes and special dwelling units and filling 30,000 jobs to support a variety of business, industrial and manufacturing enterprises with research and development agencies and light manufacturing and business predominant.

The property will afford its people unique recreational opportunities including five lakes with a total of more than 600 acres of water surface, three golf courses, and in all, some 3,600 acres of land preserved as permanent open space. Columbia City represents the hard-headed dream of an entrepreneur which gives every promise of making very substantial profits for its developers as well as setting new standards for planning and organizing communities.

The setting for the new community is an eastern section of Howard County, Maryland -- an area of approximately 250.9 square miles which in 1965 had a population of approximately 48,000. Bordered by 6 other Maryland counties, Howard County lies in the area which separates Baltimore and Washington. These cities are now undergoing extremely rapid expansion. They are just 36 miles from center to center and are joined by several major highways. The belt parkway roads which circle each cityare just 20 miles apart, and the city of Columbia itself will actually lie about midway between these circumferentials. With a gently rolling countryside and no urban centers of consequence, Howard County represents an area into which inevitably vast numbers of people will flow as the populations of the Washington and Baltimore area continue to expand and spill out of the more established metropolitan areas in search of new homes and better living. Indeed, projections of population for the area indicate that the total numbers will have doubled in less than 50 years after 1950 if the present rate of growth obtains. Without facilities such as Columbia will offer, the problems which have been foreseen of crowded schools, obsolete utilities, inadequate fire protection, insufficient railroads and very long distances to be traveled in reaching medical or shopping centers, as well as the lack of parks and recreation--such problems could be overwhelming.

The plan for development of Columbia is that of a wholly new town which will provide all facilities and resources needed conveniently and at the same time preserve and enhance the land as a beautiful and useful asset. Like its nearest comparable neighbor, Reston, Virginia, although scheduled to be several times its size, Columbia City should afford a present vision of the future.

Following several years of secret negotiation required to acquire the 140 parcels of land which now make up the Columbia tract, the extent of which was first announced in October of 1963, the watchword of the Columbia project became social planning. For more than a year a team of prominent specialists including experts interested in finance, local government, religious institutions, education, parks and recreation, etc. were assembled in what could well have been called a continuing social seminar for the purpose of thinking through every major aspect of the Columbia design. Reports prepared by participants in this seminar and by numerous other consultants are today on file at CRD offices in Baltimore and make for very interesting reading. In all, some $750,000 were spent in the first years for social thinking and planning alone, and larger expenditures are anticipated for the future.

The result has been to shape the design of a new city made up of some 8 to 10 small villages situated around a central core or town center. Each village, housing from 2500 to 3000 families, will be composed of neighborhoods of 500 to 600 families and developed taking into account plans for low, medium, and high density residence, socio-economic traits of the expected population, and basic requirements of public service. For example, each neighborhood will have its own elementary school program, a nursery school, kindergarten and a child's playground as well as a neighborhood store modeled on the old "country store" idea. Adjacent to and probably managed by the neighborhood store will be the various "social" terraces--a swimming pool, tennis courts, meeting rooms and other special facilities appropriate to community social needs. At the village level there will be a park-like square with various shops located around the perimeter including medical office buildings, a library unit, community hall, churches, necessary parking lots, junior and senior high schools and the prerequisite playing fields. The town center, which is to be the hub of Columbia, will include a large enclosed shopping mall and lakefront area with wharves, attractive restaurants, a large park on the waterfront, a college, stadium, hospital, auditorium, and necessary office buildings. Winding through the entire community will be separate paths for horseback riding and bicycling. The entire city will be served by a "mini-bus" system of small vehicles operating on their own specially built roadways. Reaching throughout the city will be sewer, water and road systems, gas, electricity, and other needed utilities.

Since the story of the new city and the hopes it raises are told in detail in a number of publications cited in the bibliography appended, there is no need to enlarge further upon what sounds like the Utopian character of Columbia, nor does it seem necessary to question at this point the motivations of the developers who acknowledge themselves to be profit orientated. The important questions to be asked in this report relate to education and libraries; what plans and programs can be devised which will yield a library program for Columbia capable of measuring up to the dream unfolding.

Here are some of the questions to be answered:

How and in what sequential steps should a library development program be mounted which in something like 15 years will serve a total county population of at least 158,000 (including 110,000 in Columbia City proper) as well as another 100,000 individuals likely to be drawn to Columbia from other areas for shopping, business, and recreation?

As new service units and programs are planned, what differences if any should exist between service offered Columbia residents and to those living elsewhere in the county?

What specific relationships should exist between colleges, schools, and public institutions and libraries serving each of these?

Is there a possibility that in Columbia there can be demonstrated a new approach to provision of public communication and information services, including performance of the library function, an approach which may truly "measure up" to all requirements as well as prove economically feasible?

How can attendant costs be met?

Where might one look for supplementary resources?

The sections which follow present a new design for a library program which is believed consistent with the aims and potential of Columbia City. To propose something less would in the minds of the consultants be to have failed really to meet the need as well as miss a rare opportunity for innovation. Or, to put it in more homely terms, a horse and buggy--although useful transportation in its day--does not belong on a modern freeway, nor can it ever be expected to provide useful transportation to the moon. New vehicles must be designed. For Columbia there must be developed a new communications system.

II.

A Communications System for Columbia

A. The Point of View

There is today no more important task performed in society than that of managing the availability and flow of ideas and information. Progress in every sector of society depends upon the efficiency of these efforts.

Responsibility for such service is assigned the communication and information service professions whose business it is. And, with respect to prerecorded ideas and information, it is the chief business of those who perform the library function. It is a business the conduct of which must take into account such propositions as these: The most important inter-relationships which exist when the library function is performed are those which help accomplishment of a productive proximity between knowledge and information required and those to whom the availability of such knowledge is essential. And this: In the long run it may prove more efficient and effective to move information to people than to move people to information.

Performance of the library role assisted by new technology is both an expanding effort and one which is undergoing a continuing evolution. The technical genius of America promises development in a very few years of electronic as well as mechanical marvels designed as to serve the nation's educational needs and interests in ways which may demonstrate capacities far exceeding those of any communications resources presently known and some of which are just now finding their way to drawing boards. The country's expanding population, the explosion of knowledge, increasing trends toward automation, the need for increased vocational specialization and for all Americans to learn very much more in much less time, plus advent of the shorter work week and greater amounts of leisure time enjoyed by most people--these and many related factors will, as new communication center resources become available and more in demand, alter in some radical ways the roles of all institutions serving education and cultural interests.

In the realm of instructional and information services a large number of recent technical innovations, including those listed below, may be shown to be having major influence on social trends and in changing the shape of community and social agencies:

> Facsimile and data transmission; use of other new electronic communication distribution systems (on a 24-hour basis); self-learning aids; cartridge-loading sound recording and video playback units; miniaturization and simplification of all forms of communication equipment; greatly expanded capacities for storage of ideas and information both in micro and computer tape form, etc.

In keeping with needs and resources such as these, librarians and other communication and information specialists have during the past decade, wherever their geographical or institutional settings have permitted, come closer together forming on a cooperative and voluntary basis what can be described as developing systems of library service.

Vital to maximizing performance of the library function* through the generation of such systems is the effective harnessing of all types of modern communications technology. And looking into the future, as is appropriate for Columbia, it seems probable there may soon arise, assisted by modern communications technology and to be administered as institutions, broad new community media service programs--programs which will be assigned responsibility for acquiring, producing, storing and making available not only the world's literature in print but also the full record of the performing arts as well as non-performing arts and crafts. This possibility, already being explored in several regions throughout the United States, suggests development of several new types of academic and community service agencies. Such agencies may as single new institutions or, using coordinating arrangements, pool their talents and facilities to devise wholly new programs and services capable of operating within regional economic limitations to render the full variety of media service including production, distribution, training for utilization, evaluation and research endeavors. However unfamiliar and futuristic such proposals might seem, the ideas which they represent have already been considered and, indeed, today they are even being revised as more advanced service designs are proposed to meet the requirements of tomorrow.

It is with such a point of view in mind that there is recommended for Columbia development of a total communication and information service program (including management of library functions). The program is to be established under new administrative arrangements working in harmony with existing authorities but providing with new economic efficiency the full range of communication services needed.

As a means of presenting the approach proposed there is introduced first an overview of what a total communication system might look like in terms of technology. This overview takes into account a variety of recommendations made by consultants to Columbia as well as experiments conducted in other places. Following this overview there is introduced the general plan for administration of such a communication program including performance of library roles.

* As used here, the library function may be defined as follows: Conscious interruption (as a unique professional contribution) of the total stream or flow of recorded ideas and information, to draw off selectively manageable amounts for storage and later retrieval and distribution to individuals or groups in whatever media forms or formats might be required to satisfy known or anticipated needs, and to exercise both "feedback" and "critic" service functions in behalf of producers as well as consumers of the communication resources provided.

II.

B. Proposed Use of Technology

Columbia City may enjoy a significant advantage by designing its communications service within a total systems concept rather than as a series of uncoordinated facilities. If properly planned, not only will this approach prove more economic, but it is capable of providing many services not previously available to urban centers in such variety.

A Total Communications System--Overview

The scope of plans for providing communications services to Columbia may be as inclusive or specialized as is deemed desirable by the developers and others who will be involved in making decisions. However, a comprehensive plan should be drafted now regardless of when it is planned to achieve implementation of a total system. Although, for example, the work of local fire and police protection organizations may not be an immediate concern, a communications network should be so conceived as to be capable of extension to wherever these services may eventually be wanted. Unusual advantages which may one day accrue in this connection could be use of TV for identifying wanted persons, finding lost articles, distribution of documents in facsimile, visual reporting and recording of emergency scenes.

Any community antenna system (CATV) (as explained by the developers during one meeting with the consultants) proposed for Columbia City, will in the present state of the "art" be limited to a maximum of 12 channels per coaxial cable. A preliminary survey of the Howard County area indicates the presence of at least 10 VHF and UHF television stations located in Philadelphia, Baltimore and Washington most of which could be received in Columbia City homes through employment of CATV. In addition, several FM radio stations should be noted. If only those TV stations which do not presently duplicate programing are carried by the community system, channel space available on a coaxial cable distribution system is still too restricted to accommodate the full range of TV and FM programing already available in the area and make available the additional activities a total system should provide.

Since the Columbia City Project will be developed over a period of 15 years, it may not be desirable or even feasible economically for the initial village or the first few villages to support a comprehensive system. Therefore, a single CATV approach may be a good one to adopt for use during initial stages.

However, in conceiving even an early system, arrangements should be made with whomever is to install it (if an "outside" operation) to reserve channels for specialized courses, regular broadcast of shopping information, airing of programs for the "younger set" - e.g. programs of a constructive and educational nature which might be sequenced and have worthwhile goals for pre-schoolers, as well as carrying a schedule of civic programs including news of the community, employment information, information on public issues, etc. Perhaps another channel could be reserved as a strictly "Pay TV" arrangement for electronic distribution of "first-run" motion pictures or concerts and plays planned for origination in the city's cultural center.

This would be the potential use of a CATV system. However, as noted above, the capacities of such a system would soon prove insufficient to meet service demands likely to develop. Of course, a second CATV cable might be installed to provide an intermediate solution, but long-range estimates of need suggest that a more complex, and different communications facility should be planned for early construction to operate in parallel so that in the future when all or most of the villages have been established adequate service will be available. Such a system might be conceived as a network service employing a number of separate coaxial cables tying a group of twelve homes, community centers and other locations to a central exchange.

Each subscriber would thus have a private channel. The function of the exchange would be to connect a consumer at his request with any program origination source or with any other subscriber on the network. For example, extension courses for credit could be offered in a wide variety of subject areas, emanating directly from the junior college or from nearby universities. This method assures payment of tuition for the service. Another possibility is to schedule courses for housewives in homemaking, child care, medical and health services and community affairs via the same facility.

Some additional offerings which might be made available through this network include:

1. Remote reference services direct from a Central Library. A "video librarian" would be on hand to receive inquiries and to select the reference requested for viewing via the TV cable system. The viewer, in his home or office, could employ remote controls for turning pages as well as for focusing and positioning of the TV camera (similar to facilities employed experimentally at the University of Virginia in connection with the Alderman Library).[1]

2. Legal reference and consultation to be provided through a separate bureau (in the same manner as above).

3. Tutoring service arranged for individuals or small, organized groups to be interconnected for two-way electronic communication in dealing with specific subject areas to receive assistance from qualified instructors during scheduled hours.

4. On-the-job training for participants working in plants and establishments who might use the facilities during specified periods to up-grade capabilities.

5. Vocational retraining programs to meet the challenge of technological unemployment. Such activities could be subsidized through participation in approved governmental programs.

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[1] A report on an experiment involving the use of closed-circuit TV in a decentralized library situation (prepared by the Bureau of Public Administration, University of Virginia, for the Council on Library Resources, Inc.) University of Virginia, 1958.

The preceding represent but a few examples of the capabilities of the proposed design.

Audio as a Supplemental Service

It will not always be necessary to employ television for many Columbia services. Provision of an audio network through a private automatic exchange (similar to PBX) has much to offer. Such a sub-system would not eliminate or substitute for regular common-carrier facilities, but could actually add a service not currently available in all of the facets to be listed:

1. Language laboratories, learning laboratories and electronic classrooms are increasingly important features of modern schools. These installations are not inexpensive, and it is here that a great contribution can be made. The booths, individual carrels and learning stations, consolidated either in specific rooms or distributed in various patterns throughout a school, could all be serviced to supply prerecorded lessons or programs electronically from a central location. This approach eliminates the need for installing numerous tape recorders and playbacks in each location to perform each separate function. Also, the resulting central library of prerecorded selections would be much more comprehensive than any local collection normally acquired for a single school. This design, however, would not eliminate local collections required for specialized purposes. Another advantage of the system is the fact that recorded programs or lessons may be "dialed-up" as needed without the requirement of clerical assistance. This same resource could be made available to assist home study.

2. A popular and classical music library available to residents throughout the city and operated in the same manner as described in (1) above has considerable merit. This approach is somewhat parallel to an earlier concept established in the Louisville (Kentucky) Free Public Library. There, thousands of prerecorded tapes are stored and ready for reproduction on a battery of fifty tape playbacks for dissemination over telephone lines to all of the city's junior high schools, hospitals and other institutions affiliated to benefit from this service.

3. A consultation-tutoring-reference service can also be incorporated through audio channels for use in the home as well as in the school. Personnel attached to schools and libraries can be scheduled during appropriate hours to provide specialized assistance for a variety of purposes. For example, adults may want help in learning a foreign language; others may wish information concerning higher mathematics, while seasonal demands may require the services of several income tax consultants.

4. Telelecture, a method of two-way audio communication between a class of students and an eminent authority lecturing from a distant location, is a technique that is becoming increasingly popular. This approach has been further enhanced by development of the Electrowriter and slow-scan TV. These latter types of equipment require simply an extra pair of connecting wires to provide visual reinforcement along with the accompanying audio. Coaxial cables are not required. An Electrowriter, for example, can be hooked up so that an instructor in his college classroom can present

a lesson to groups in all of the village centers simultaneously. The graphics he draws or his writings may be reproduced at the receiving point and projected in enlarged form on motion picture screens. The same facilities also permit question and answer sessions.

5. Group discussion seminars might employ conference call methods as a convenient way to involve participants. Subject matter can be as diverse as a situation demands. Leaders of Great Book groups as well as consultants for investor's clubs and other such organizations can "meet" more frequently and comfortably in their own homes and still interact with associates through this two-way medium.

6. Shopping and merchandising procedures are already undergoing radical changes. In the years ahead, it will be possible to phone the department store order line, dial a merchandise selection code number taken from the catalog, and then insert the charge plate in the home phone unit to complete a transaction.* As a further step, it is possible to tie in the use of video on the CATV system or on the coaxial TV exchange system as a "shopping channel" to display new merchandise, produce, hardware and "on sale" items not in the current catalog.

7. Responder systems represent an evolving technique designed to collect, evaluate and to report immediately reactions of individuals and groups to problems and questions. Through use of the Columbia City communications system, residents could become actively involved in community affairs. As a result of audio or video presentations, participants could press specific response buttons on units connected to their audio system. In serving some applications, this type of facility could be used in classrooms, study halls, and large group teaching situations. In other instances, the citizens in the community could use such responders to feed back reactions to issues related to city government for preliminary sampling prior to an election and for other pertinent applications. Similarly, such feedback to television studios and other program origination locations could add a new dimension to media utilization.

8. Shared-time computer service demands can easily support an electronic data processing (EDP) center. The growth and increased use of computers in business, industry and education can be stimulated further through provision of such central processing facilities. The services could be available on a shared-time basis to anyone having need for such facilities. Thus, a college or university student working on a thesis could actually feed data to the computer center by means of the overall communications system and have it processed without additional involvement. Hospitals will certainly have other needs in terms of their specialized functions. The central computer facility could conceivably be devised to store basic catalog information in selected fields for libraries. A Columbia resident could from his home, interrogate the computer remotely to determine where a particular book, recording or reference is located, and even order such items in this manner in the future. Another important library function could

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* TelePrompter Corporation has experimented with such systems for several years

be to actually use the computer to update catalogs and listings through interconnections with automatic photo-typesetting machines and presses that produce the finished product. Business organizations could employ this facility to maintain perpetual inventories, to service customers in filling orders and in arranging transaction adjustments. Schools will have additional administrative, guidance and programing applications.

Communications for Schools

It is suggested that the communication sub-systems installed in individual schools be designed to articulate with similar facilities in other schools within a single village. Thus, the TV and audio hookups will make it possible for all schools within a complex, or city-wide to intercommunicate, to exchange programs, to hold in-service meetings and to disseminate announcements of general interest. This plan would include pre-school, grades 1-5, junior high and senior high schools. Also, this local facility could tie in with the junior college and the cultural and commercial resources of the city as well as the total system.

Each school, because of its particular goals will require somewhat different overall installations. However, a basic configuration will be common to all levels. For example, the internal communications system in a school will include some or all of the facilities listed below:

1. A central intercommunications control console with (preferably) 3 pairs of audio lines connected to each room, learning space or other instructional areas in the building. The intercom console would be located centrally and operate as the distribution outlet to classrooms, etc., for the school library depository of prerecorded tapes and records (as well as graphic materials--films, filmstrips and video tapes) to be added later.

2. Classrooms would be equipped with multiple overhead loudspeaker units (approximately 4 units per average classroom); the front and back walls of classrooms to be fitted with "facilities cabinets". These recessed boxes make it possible for teachers to plug in tape recorders, phonographs, or microphones at the front of the room to use the overhead speakers for effective sound distribution. Similarly, an audio patch cord from 16mm. motion picture projectors can be plugged into the box at the rear of the room for this same effect. Other functions of the setup enable teachers to phone, via the intercom, to the school console operator to arrange for the tape recording of class discussions, student panels and other types of verbal interaction. To perform this service, the operator merely reverses the loudspeacker circuitry by means of a switch so that the units perform as pickup microphones. Teachers can employ the intercom to request the console operator to channel prerecorded programs through the overhead speakers in specified locations.

3. Random access equipment* makes it possible for teachers to "dial-up" prerecorded programs from their classroom locations. The automatic system channels the signals into the overhead speakers for reproduction. This

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* Dial or push-button automatic selection of any prerecorded program or lesson in storage in the system.

same facility can be extended to the local school library facilities, listening stations, study carrels and seminar rooms. Initially, or later on, video can be added.

4. Telephone lines for telelecture use can be terminated for patch-in at the master console. This arrangement makes it possible for any or all rooms to participate in this activity and also eliminates the need to fit up special areas for telelecture use. Two-way audio circuitry from the classrooms to the console is necessary so that students may question the guest lecturer in another town or state. The earlier reference to the Electrowriter and to slow-scan TV also applies here.

5. Language laboratory and learning laboratory techniques have application for many different subject disciplines as well as for such specialized applications as speech correction and speech therapy. These facilities can also be programed from a central source activated by the dial system and channeled through the intercom. Where it is desirable to have separate program originating channels in specialized rooms in a school, these programs too, can be fed back to the master console for distribution to other areas within a school. In this way language laboratory lessons, for example, could be available for listening in study halls as well as in libraries.

6. Along with the other audio facilities would be consideration of a central dictation arrangement to permit teachers to use the telephone handset in the facilities cabinet in the classroom to dictate letters and memos for automatic remote recording and subsequent transcription by the departmental or pool stenographer(s). This function would be another service of the basic intercommunications system and would use automatic recording units now available.

7. Each school building would be equipped with a coaxial cable network capable of receiving and distributing externally originated TV programs as well as lessons from individual classrooms and other learning spaces. Thus, each area connected to the system would be able to originate and/or receive TV programing. Advanced designs include the possibility of employing both RF (radio frequency) and direct video (high definition TV) as alternate distribution modes, depending on the kind and quality of service desired.

   Plans must be detailed for the proper placement of outlet boxes, pull-boxes and junction and amplifier cabinets to accommodate the coaxial cable runs as well as the audio lines for each classroom.

   In addition, suspension arrangements must be included for supporting TV receivers or monitors from the walls or ceilings. In such instances, additional conduit runs will be required for A.C. power as well as for channel selection circuits. In the large instructional spaces, it is well to consider the ultimate installation of projection TV units. The optical barrels can be suspended from the overhead, with the associated equipment placed conveniently in a rack nearby.

8. Responder systems in selected classrooms and in other locations, including the auditorium, should be considered. If the system is not to be installed initially, at least conduits and raceways should be provided to facilitate future implementation.

9. Installations that require special attention relate to the selection, use and arrangements of chalkboards and projection screens. These two areas can no longer be designed separately. The rapidly increasing use of overhead projectors in classrooms and large halls introduces a rather serious problem. These projectors "keystone" or distort the images because of their wide-angle optical characteristics. To counteract this effect, it is necessary to provide a screen with a tilt feature that allows the top edge of the unit to come forward for this type of projection. One solution is to use a roll-down screen anchored to the ceiling about 12 to 18 inches away from the wall. In use, the lower edge is attached to a hook on the wall. A tension bow is needed to eliminate excessive "ballooning." A more satisfactory approach is the employment of a rigid panel hinged at the bottom edge to perform the same function. These facilities will also work well with telelecture when the Electrowriter is used for mass viewing. In some applications images have been projected directly on pastel colored chalkboard panels or on enameled surfaces so that markings may be made directly on projected images by teachers and students.

Increasing in popularity is the use of more than a single projector at a time. In this way, it is possible to display an image on the screen, discuss it with the class and then project a second image alongside the initial graphic for comparison or other instructional purposes. This design requires a screen that is much wider than the conventional product. Finally, consideration should be given to the use of rear projection in certain classrooms, study halls, and large meeting rooms. One arrangement is to mount the chalkboards as sliding panels to reveal the rear projection, translucent screen when this facility is needed. Remote controls placed conveniently near the instructor's station will operate a projector or a combination of projectors for all necessary functions. This arrangement prevents machine noises from being heard in the classroom, and the rear-projection room can be quite small and still serve two adjacent classrooms. Even TV projectors can be installed and used in this fashion.

Although not directly connected with the communication system, other factors greatly influence the ultimate effectiveness of the facility when used in the classroom. Many of the problem situations result from lack of coordination in planning the associated systems and utilities. A few of the more important items follow:

1. Lighting for classrooms and other instructional spaces must include consideration in addition to the provision of uniform illumination with sufficient lumens output. Since all of the student instructional areas will be potential TV originating locales, the lighting circuitry should be oriented somewhat differently from the conventional pattern. Extra circuits should be provided for the forward areas of the rooms and even "fill-in" circuits should be installed as standbys when additional illumination is needed for TV pickup.

Fluorescent fixtures should be of the "noise-free" variety, or the ballasts or transformers should be located in the halls above the suspended ceilings to eliminate possible interference with audio pickup.

2. It is important to consider the use of carpeting in the classrooms instead of hard surface tile since the former treatment provides an excellent accoustical absorbent effect which cannot ordinarily be achieved with wall and ceiling treatment alone.

3. The electric clock and bell system should be of a variety that will not interfere with TV closed circuit distribution cables. Some systems on the market send out RF correction pulses which "tear" TV images.

Materials to Support the Program of Instruction

The treatment presented above deals primarily with the concept of employing communications technology to advance intercommunication possibilities between rooms and classrooms in a building, between schools, between schools and other agencies in the community and even between the school and locations anywhere in the country. Despite such provisions, it is still necessary to be concerned with other kinds of equipment and materials for more localized applications. Typical recommendations of this sort follow:

1. Each classroom or instructional area, commencing with the first grade, should be provided with a teacher's desk having a built-in overhead projector. Also, one or more transparency-making devices should be supplied to assist use of this device.

2. Each school should have appropriate duplicating equipment to handle electrostatic or xerographic copying, with additional provision for plate or master making for offset processing.

3. Tachistoscopic, controlled reading and individual reading acceleration facilities should be acquired and used in configurations appropriate to grade levels and subject areas involved. The addition of such equipment as the Language Master, tape recorders, headsets, and similar items would underwrite a variety of services to assist children to develop perception, rate and comprehension in reading as well as to sharpen skills in music, mathematics, and shorthand.

4. Repetitive-loop cartridge motion picture projectors (8mm.), with and without sound track, are effective for "single concept" use as well as for applications in programed or semi-programed shop or laboratory setups.

5. One or more 8 mm. motion picture cameras (perhaps one with and one without sound track capabilities) would permit local production of films for the equipment mentioned above.

6. Despite recent 8 mm. developments, motion picture projectors of the 16 mm. variety will still be important for school applications for some time to come and should be provided to utilize the great resources of the available film library.

7. Filmstrip-slide projectors and tabletop filmstrip and slide viewers should be furnished to allow both group and individual use of these visuals.

8. Phonographs will be needed for local purposes and special applications only since the intercom will be able to provide other types of programing. However, A.C./battery operated phonos have many possibilities for use out-of-doors and in spaces where plug-in connections are not available. Of course, headphones are important for individual use of this facility.

9. Teaching machines and programed learning will become progressively more important in terms of curriculum reorganization in the years ahead. The form of the equipment may be quite different from today's products. However, laboratories, shops and individual learning spaces should be modified in design to accommodate the installation of such items. Carefully evaluated and properly selected, programed learning can be used in many curricular applications right at the start.

10. It is important to plan for the inclusion of a curriculum laboratory, a production center for materials of all kinds, a film, filmstrip, slide and materials distribution center and the supporting staff to stimulate proper utilization by both teachers and their students--at the school and at the center levels. Research and evaluation of teaching and learning designs and techniques will be encouraged to a greater extent than ever before in the history of education. School and center facilities must be adequate to meet this challenge.

Communications for the Home

A.T.&T. and its various state subsidiaries are providing an increasing number of communications services for the home. These include extension telephones, automatic dialing devices, intercommunication systems within the home as well as the promise of automated conveniences that will allow housewives out shopping to dial a special number that would turn off the roast or turn on the automatic washer. These services are available now or will be supplied in the near future. A question presents itself as to a division of effort. With what functions should this communications plan concern itself, and what services should be left to common carriers?

For example, it would be desirable to install a system of interconnecting circuits when a house is constructed. This network would permit electronic distribution of AM/FM and phonograph music and programs to any or all rooms from a designated location in the home. Local control of loudspeakers for "volume" and for "on-off" would be provided in each room. Also, the same network can be used for intercommunication between the house and the garage or to provide background music for the patio. Similarly, proper equipment would supply facilities for a "baby sitting" feature with a microphone pickup in the nursery so that parents can be alerted to unusual noises reproduced in any room in which they plan to be at a particular time.

It is anticipated, of course, that CATV terminations will be made to all of the homes. However, it might be well to also include coaxial cable distribution and terminating boxes in every major room including a weatherproof unit for patio viewing.

Communications for Business and Industry

Designs for commercial and industrial structures will have to be individualized and based on the needs and requirements of each activity. However, a few basic ideas are appropriate:

1. Provision of an internal audio and coaxial cable TV distribution system to handle programs received from CATV and from radio as well as from locally originated sources.

2. Coaxial terminations installed wherever assembly line production is contemplated for the use of programed monitors to train workers.

3. Communications facilities in employee recreation areas for recreational as well as for instructional purposes.

4. Provision of background music where appropriate throughout the structure.

5. Interconnections for use with central computer facilities (mentioned previously).

6. Tie-ins with such locations as hospitals, libraries, public agencies and similar locations that may be appropriate to specific situations.

7. Business and industrial units could also originate stimulating and valuable resources for TV and audio pickup for school use as well as for public relations programs addressed to the community at large. Recommended approaches in designing and in phasing-in the total communications system would be detailed at a later date as supporting details become available.

In writing this proposal, it is a difficult problem to be both practical and imaginative, because of the rapidity with which technology in this field is advancing. What may seem "blue sky" thinking today may well be obsolescent a year from now. On the other hand, it is necessary to keep in mind that the city will develop over a period of some 15 years.

It is anticipated that initial growth of the total system may be relatively slow in terms of the necessary economic support for full realization of the potential of the facility envisioned. Therefore, the following phases are recommended as a progression for implementation:

1. Instllation of a community antenna television system that will bring in programs from CBS, NBC and ABC. In addition, include any local stations deemed necessary and desirable, which at the same time do not duplicate network material. UHF, of course, would be converted to VHF on the CATV circuit. Plans should then be made to include and to program the remaining

channels (up to a grand total of 12) to include such features as:

a. A Weather Station This facility is almost self-operating and can be set up for about $6,000. When in use, a TV camera automatically "pans" a series of display gauges that indicate wind velocity and direction, barometric pressure, humidity and other salient factors. With this resource, a resident can turn to the weather channel any time of the day or night to view current information displays. Usually, the audio component provides background music.

b. A "shopping channel" This feature is quite popular in other CATV installations and should be duplicated for the Columbia system. Shops, service organizations and other businesses can participate in supplying programs through the medium of video tape recording or as direct pickups from their locations to include style shows, book fairs and similar features in addition to the presentation of sale items, etc.

c. The "tiny tot" channel would not be in competition with the cartoon and similar juvenile offerings on commercial TV, but could well be structured to provide pre-school education for youngsters in a way that would be both palatable and useful. Perhaps the programing might be a function of the school system itself.

d. One or more channels, as programing becomes available, should be devoted to both formal and informal instruction and education. In some instances credit courses at the high school and junior college levels might be offered. Another approach would be to schedule such features as a cooking school, a homemaking series, instruction in learning to play bridge, ideas for entertaining, etc.

e. FM station programs can also be distributed on CATV to provide another source of cultural enjoyment.

2500 MC Television

Recent Federal Communications Commission authorization opened up a new set of channels in the 2500 megacycle spectrum. These channels are much higher in frequency than even the current UHF allocations, and, therefore, require special head-end antennas, conversion equipment and amplifiers for receiving locations. In addition, the transmitters are of the low-power variety, designed to cover a service radius of between 5 to 20 miles, depending upon surrounding terrain, height and type of antenna, and whether or not the facility is to be used for directional or non-directional transmission.

Despite these limitations, there are a number of advantages inherent in working with 2500 MC. A station can be put on the air for as little as $25,000. As many as five channels can be allocated to a given service area, and the channels would provide the means to tie-in community centers, schools, government agencies and ancillary services in connection with facsimile and data "remoting." The North Circle Pilot Project in St. Louis County* is experimenting with designs to electronically distribute films, and other instructional materials through such a network. It is important to reserve channels without loss of time if this valuable resource is to be available for Columbia City.

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* The feasibility of a cooperatively-owned multi-purpose, multi-channel closed-circuit television system for instruction, materials distribution, and administrative data handling - Preliminary Phase A report under contract #OE-4-16-024, Office of Education.

It is not possible at this point to provide a firm figure as to the cost of a CATV system for Columbia City. However, the following steps and investments are involved in creating such a facility:

1. Permission for a franchise must be granted by Howard County. It is assumed that obtaining such authorization will be no problem since it is a local issue and requires no permission at this writing from the Federal Communications Commission. However, FCC control and regulation is a future possibility, since hearings are now being held in this connection.)

2. A survey must be made to determine the pertinent design factors of the system since this involves such factors as terrain, distance from stations, height of tower necessary, length of runs of cable, location of head-end equipment, etc. Such a survey can take up to about 4 days to complete and expenses for an engineer retained for this purpose would run between $50 and $100 a day plus incidentals. It may also be necessary to conduct field strength readings as an additional expense.

3. It is assumed from the city scale model shown to the consultant group that utilities will be run underground. This is certainly desirable. Consideration, therefore, should be given to the fact that even with the use of the new aluminum coaxial cables with poly jackets, there is an aging factor involved at a rate of somewhat less than 5% per year. Provision, therefore, must be made for easy access for replacement of cables whenever this procedure is indicated.

4. Currently, it is anticipated that a charge of between $3,400 and $4,000 per mile will be involved for the installation of the distribution cable. This cost will vary somewhat with an underground installation depending upon the problems involved.

5. Once the distribution cable is installed, individual "drops" to each home and connections will average about $4 to $5 although the underground approach may be somewhat more expensive.

6. The head-end equipment, which includes the receiving and conversion equipment, amplifiers, the supporting tower and associated equipment can run as high as $25,000 to $35,000. This is in addition to the charges mentioned for cabling to the point where local distribution takes place.

Despite the charges mentioned above, most CATV systems actually amortize their cost within 4 to 5 years, and some have achieved this goal in 3 years. This estimate is based on the installation, operation and control of CATV by an outside contractor. It is proposed later in this report that control of the facility be retained by the Columbia communications service agency as part of the total communications system.

As the city grows and as the demand for additional services increases, one answer would be to install a second and parallel CATV distribution system. This would provide a dozen additional channels for local use. The drops or tap-offs to the homes and other places would then include two separate cables. In use, it would be necessary to provide a selection switch at terminal boxes in the homes to permit switching to the "A" or the "B" cable. With this second facility, many other services can be added.

A final phase can be given consideration when the traffic warrants such action. This is the coaxial cable exchange. This design is described earlier in the proposal and would provide a private channel from each home to a central exchange. A somewhat similar system was tried some years ago in Galveston, Texas. Subscribers paid a special monthly rate according to a plan similar to that used when subscribing to telephone service. One approach was to subscribe to viewing facilities only. However, for a larger monthly payment, it was possible to arrange for two-way video with a camera actually in the home, mounted atop the television receiver. In addition to the applications mentioned earlier, it was possible for a businessman to dial a number from his home and actually view images picked up by a TV camera installed in his shop for surveillance purposes. It was also possible to "dial up" the local physician and have him view his patient from a distance to prescribe emergency measures until he could appear in person. By the time Columbia City is ready to consider this latter type of installation, it is assumed that technology will have advanced sufficiently to make the approach both practical and feasible economically.

Let's Talk About Costs

Although certain basic costs have been presented in connection with the CATV system, these figures are all contingent on a number of local conditions that are as yet unknown. Similarly, the overall communications system recommended represents a design that has not yet been implemented in its entirety in any other city. The fact that this facility will be installed in phases poses yet another problem due to technological developments and price changes that will result from such progress.

Despite these unknowns, there is sufficient evidence from installations over the country to substantiate the major concepts involved in the proposed design. The Hagerstown closed-circuit facility supports many of the approaches listed for CCTV. Experience reported in the use of over 10,000 language and learning laboratories makes it possible to benefit from the effective patterns and techniques that have been validated.

The comprehensive responder system at Chicago Teachers College-North and in other places as well as the wide variety of computer applications in business, industry and by the military reveal the effectiveness and adaptability of this technology.

Other examples can be cited. However, it is sufficient to say that the technology is already available, the component functions have all been tried and tested as isolated concepts. There is no reason to believe that the overall communications system proposed for Columbia would not be an outstanding success which could set a pattern for the country.

Underwriting costs is a matter of providing sufficient service in a variety of ways. Our affluent society has been moving more and more in the direction of investing greater sums for services. The quality of the services given will be the keynote of the success of the operation.

II.

C. Administration

The broad scope of plans for providing communication service to Columbia which have been set forth above and the requirements suggested for library service to Columbia (as these are described in section three) indicate that in Columbia a new approach should be devised for administration of public communication and information services. Such an approach would be represented in the establishment of a new non-profit corporation (or subdivision of the proposed Columbia Parks and Recreation Service Corporation) to be called the Columbia Communication Service Agency. Policies for the new agency would be set by a Board of Directors, each of whom should represent a specific segment of the educational, cultural, or economic community. In actual operation, it is expected that the CCSA Board would conduct its business in a manner common to similar groups associated with educational television, museums, and public service organizations.

Administered by a qualified professional staff, it is proposed that the Columbia Communications Service Agency be assigned responsibility for administration of the following services:

1. Closed-circuit television
2. A Columbia Computer Service
3. Basic library services for villages and the Town Center as well as for the proposed academy and college programs
   Library services to be managed by CCSA include:
   a. Central processing for the system
   b. Staffing and administration of village and town center libraries
   c. Administration of paperback sales units
   d. Provision of an audiovisual materials and equipment storage and maintenance center for the schools and community
   e. Necessary preparation of graphic materials and motion picture production
   f. Administration of a special scientific and technical reference center
4. Research, experimentation and training of individuals and groups for optimum use of communication resources available to Columbia citizens and institutions

It is assumed that necessary delivery and mini-bus pick-up service schedules could be arranged by CCSA with each unit participating in the program, and that certain special activities might be developed as a part of a CCSA community service program including health reference and referral, provision of medical information for doctors, community news distribution, etc.

Physical facilities to be occupied and/or managed by CCSA would include a Town Center Library and CCSA headquarters (presumably in one building), the several village libraries, and a warehouse facility to be located in that area of the city planned to accommodate such buildings where much needed space for storage of materials, equipment and processing work could be obtained at low cost.

As for fiscal considerations, under Maryland law the Howard County Board of Education and the Howard County Library Board can each contribute a "fair share" to the costs of building construction. Assuming the employment of qualified individuals eligible for any necessary state certification, school and public library services might be acquired almost totally under contract. Further, it appears that the costs of such contractual service to Columbia would, if anything, be lower than were separate arrangements supported. Regarding provision of CCTV, it is believed that in return for an appropriate rental charge, the basic system required might be installed without any cost to Columbia by an organization interested in obtaining a suitable franchise. If the kinds and volume of business and industry presently planned for Columbia ever reach the proportions anticipated, installation and maintenance of the proposed computer service unit should easily become self-supporting. As the consequence of fees received, use of the proposed television and audio systems for what would amount to advertising or performance of other special functions such as shopping, could bring in substantial revenues. Special fees charged to home users of the closed-circuit programs might be received by CCSA with, of course, differential rates applied to business, industry and to various educational and cultural organizations and institutions. To establish basic TV facilities it is assumed that some funds would be provided by the developer.

Finally, as a source of possible support, the variety of new programs established by the Federal government to improve educational opportunities should be considered. For example, Title III of the Elementary and Secondary Education Act of 1960 calls for "development of supplementary educational centers and services to provide vitally needed services not available in sufficient quantity or quality and to develop and establish exemplary model programs." Title IV of the ESEA proposes grants for educational research and training and for development of the national and regional research laboratories. The NDEA extension as revised supports a variety of media research and development programs, and demonstrations. A broad variety of new vocational education programs including work-study efforts, cooperative education, vocational training, pre-employment and extension courses, as well as manpower development and training--are all potential sources of income to help establish and support CCSA operations. In addition, the imaginative complex proposed, which can combine in a joint effort the energies and resources of the State, of Howard County authorities, and of the private sector for provision of communication and information services for an entire new city might well be attractive to a private foundation as an investment in the future. (It should be remembered, however, that all such funds must be regarded as "starter" funds.)

For reasons described in earlier sections of this report, the actual dollar costs of creating and operating CCSA have not yet been computed. However, the revenues expected to become available from all sources should, insofar as present estimates indicate, be very much more than adequate to meet the expenses required.

CCSA administration of school or public library services would take nothing away from either group. By virtue of their separate authorities, each agency might at any time they were dissatisfied elect to withdraw and establish new services of their own. The village library building complexes which are proposed could be owned, in fact, by the school and public library boards and simply managed by CCSA under contract.

To sum up, through sharing of facilities and staffs for performance of library functions and related communication and information services, the costs of each service program could be reduced in terms of meeting total requirements. By virtue of relationships to be established with commercial interests, increased revenues could be available to support CCSA activities and, hence, improve the quality of school and public library service as well as that of other communication and information service operations. Insofar as a preliminary review of school and public library law can show, there are no major barriers to be faced in establishing the arrangements needed. The primary and most obvious effects of establishing and employing a CCSA to manage library service and other communication services in Columbia would be to reduce the cost of space and salaries, provide more hours of library opening, reduce the size of the clerical staff and increase manyfold the range of media and services available throughout the new community.

The proposed development and use of communications technology has been described in a previous section of this report. But, in summary, multi-channel outlets which will be available in each school and library could also provide two-way intercommunication with homes on a fee or subscription basis. Such connections might well be made without initial charge to schools, and any public or private institution might be tied into CCSA TV, audio and computer facilities for a price. Special stations could be located in various places in the community including the downtown area for direct channeling by individuals of requests to CCSA almost with the same facility one might enjoy if making a telephone call from a private booth on the nearest corner.

In contemplating development of a CCSA, there may be fears that commercial interests could dominate and thus distort or otherwise alter substantially the nature of educational and cultural services offered and that inherent in the very concept are dangers of a "big brother" society. Such fears are more romantic than reasonable. The constitution of the Board of Directors should in itself prevent such a problem from arising, and the educational authorities would in all cases retain the right to withdraw and to arrange separately for special services which might be required.

In short, CCSA is chiefly a communications "pipeline" capable of distributing several messages of different kinds at one time. But what is actually generated by the system and what is used will remain the responsibility of those who contract or otherwise pay for services rendered. If, in the case of the schools, it should prove best because of retirement regulations, etc. to have those employed as school librarians and others directly affiliated with schools retain that standing, there is no immediate or obvious reason why such personnel could not continue to be employed directly by schools and simply be assigned to the CCSA for communications work.

Seldom, indeed, does the opportunity come along to build new the type of program envisioned. The Columbia situation is unique, one which poses few if any barriers to the development of an optimum program, and one which affords a set of circumstances more than favorable to achieve a "break-through" in library and related communication service planning. It would be a tragedy to miss the opportunity.

As a means of launching the effort, as soon as possible funds should be sought to support a major study in depth on the costs of operating the service proposed, as well as design of suitable structures appropriate for housing the various programs. In view of the imminent construction of the first village, it is recommended that proposals suggested for a library complex combining the school and public libraries in one physical unit be adopted and that electronic connections required for later installation of whatever communications devices may be wanted be installed.

Prior to formal inauguration of CCSA, both school and public library facilities could be managed by the school and public library authorities themselves and simply be turned over to CCSA for management when that agency has been established. Finally, whatever else may be involved it is hoped that Community Research and Development, Incorporated will take the steps needed immediately to insure installation of the necessary CCTV antennas, cable and other equipment so that in the same way water and sewer service will become available, communication lines may also be tapped.

III.

Implementing the Library Function

A. The Library Prospect in 1965

As of September, 1965 the Howard County Library programs including both public and school services may be described as functioning well but as less than adequate, largely the consequence of insufficient dollar support caused by low population density. The advent of Columbia stands to change the situation in major ways not only for residents of the city but for all who live and work in or near Howard County.

Second lowest in the state in terms of per capita support, the Howard County Public Library is not at present in a position strong enough to accept full responsibility for extending its services to Columbia. The library is, however, progressive in thinking and in its administration and participates actively in the Metropolitan Maryland Library Service (to be connected soon by teletype). It undertakes its processing work under contract with the Eastern Shore Maryland Cooperative. And, when suitable funds are available, it is the library authority to which Columbia City should and must (according to law) look for provision of its public library service--either directly or under contract as proposed. Book catalogs planned for the Enoch Pratt Free Library of Baltimore will undoubtedly be available, and new network services being planned, also by Enoch Pratt may be tapped by Howard County when the time comes to augment service. While such service may not involve advanced technology (for example Long Distance Xerography) there is the promise--even in 1965--that whatever happens in Columbia, the Howard County Public Library will enrich its own programs substantially through relationships with other libraries in Maryland and, most importantly, with Enoch Pratt.

Today, the Howard County public schools serve 11,000 students in 18 separate buildings, 12 elementary and 6 secondary. The program offered represents a good traditional endeavor. School library operations are totally independent of the public library and are managed by a school library supervisor who reports to central administration. (At present this person also supervises music in the schools.) Each high school employs a professionally trained librarian, and all of the elementary schools have library rooms although they do not employ trained staffs. Both teachers and parents are asked to help out at various times to provide needed services. In looking to the future, school authorities hope to acquire exceptions to zoning for fifty school sites and to work closely with other agencies concerned with educational and cultural development. It is presently expected that the junior college proposed for Columbia will become a part of the Howard County School System.

Featured in the superintendent's annual report on the schools for 1964, the library program is regarded as very important and, indeed, that without which no significant educational program could be devised. There is no objection to "dreaming ahead" as to what the program might become, taking into account, for instance, as one proposed study already does the possibilities of automating school library services through provision of information retrieval systems and performance of automatic abstracting, indexing functions as well as an eventual use of computer facilities to mediate and control self-instruction on a shared-time basis. As proposed elsewhere in this report, the school sees opportunities rather than threats in the computer-based record-keeping and instructional services which could be available in Columbia. While the schools would not wish to relinquish in any way their authority over library service provided pupils and their faculties, they apparently do not see obstacles to contracting for such services. Nor is it beyond the realm of possibility that programs established in Columbia City might be regarded as experimental and pilot programs provided the opportunity was clear for appropriate later development of similar service throughout the county.

In short, the present situation respecting library service in Howard County is this--programs are limited in scope and undersupported even in terms of present enrollments and population; however, administrative hopes are progressive. There is a readiness to share in the development of dreams represented in the Columbia City project if these will not compromise library service in the county as a whole and if the dollars needed can be found to support the increased efforts required.

Granting the readiness of both the school and public library systems to move cooperatively (while retaining their independence) toward improving their services in the county and meeting the challenge of Columbia, it has been acknowledged that in terms of both norms and national standards both systems are far below par and that major programs of study and public education will be required to raise levels. Basic resources must be improved greatly. For instance, the Howard County Public Library (with a staff of 8 including 1 professional) has less than half the personnel it should and the present count of approximately 40,000 volumes is far below the more than 100,000 volumes which should now be in Public Library collections. School library programs also require much additional support to bring them up to suitable levels. Special studies will be needed to anticipate optimum ways in which the junior college can be developed and what its relationships should be to existing school programs. Of special importance in contemplating the library prospect would be procurement of funds necessary to undertake building design and program cost studies which inevitably will be required to realize library service objectives set for Columbia City, e.g. gross estimates of space ultimately needed in the Town Center building (or CCSA headquarters) including that required for the library management and related Town Center programs of service. A very rough estimate suggests that the over-all building will probably require 75,000 to 100,000 square feet of which amount 12,000 to 15,000 square feet must be set aside for communications control and TV studios. Minimum estimates of space required for each village library complex range from 10,000 to 12,000 square feet with 4,000 square feet set aside for reading rooms in schools and to serve the general public and the balance to be shared in common facilities for office space, conference rooms, storage areas, etc. At least in the initial stages, collections purchased to serve the schools should approximate 10,000 to 12,000 volumes with a goal established as 10 books per pupil. A first basic collection developed to serve the general public might be small initially but should certainly be so planned as to provide two books per capita--or approximately 20,000 to 25,000 volumes--by the time the village is fully occupied. Envisioned for the library collections kept in Town Center headquarters and their own separate storage centers would be perhaps 100,000 volumes, making a total reservoir of approximately one-half million books by 1980 available within the Columbia City system as a whole, including school materials.

Exclusive of building and equipment costs and the initial investment required for books and other materials, it is estimated that the annual cost of managing the total library system per se (including service to schools as well as each community) would require an annual budget well within the total amounts expected to be available for support of the program when conceived as operating within the framework of the broader CCSA plan.

There follow next more complete statements of specific proposals for library service to schools and to the community at large.

III.

B. Proposals for Service to Columbia Schools

As a planned community within the boundaries of the Howard County unified school system, the City of Columbia creates some administrative difficulties, but also benefits for Howard County. Difficulties arise because new Columbia schools, which under Maryland law will be administered by the county schools system are to be located within a planned, highly unified community, while other schools in the system remain outside. The potential benefits which Columbia may offer the Howard County Board of Education include major innovations in curriculum development, teaching techniques, and in the use of newer media of communication for instruction which few school systems have experienced.

Community Research and Development Corporation, Inc. has launched its Columbia City Project at a time when American education is entering a period of innovation which promises to revolutionize all schools. Neither Howard County, nor any other growing school system, can remain untouched by the ferment. This educational revolution is characterized by innovations in curriculum, changes in administrative organization, and the use of new approaches in teaching.

Curriculum Change

A recent Maryland School Bulletin[1]: Policies and Programs; Public Secondary Education in Maryland defines curriculum as "all the experiences that learners have under the direction of the school." A curriculum thus defined not only will provide important common experiences for all students, but also will enable them to explore more specialized interests and create a spirit of inquiry which will lead to independent exploration of vital subjects. In short, curriculum is the total instructional program of the school and "constitutes the substance with which the philosophy and goals of a school system are implemented."[2]

A "living" curriculum responds to the society of which schools are a part. Today society faces many grave problems and challenging developments. Scientific and technical progress are changing the physical, economic, social, and political world. New methods of transportation and communication have brought widely scattered peoples close to us, and have exposed us to other nations' cultures, and these cultures to ours. Changes in economic structure, as well as scientific and technical advances have altered radically the world of work. The great migration from the American countryside to the great cities has altered traditional social and political structures, while new medical discoveries, lengthening the average life span, have contributed to an increase in population which many scholars believe may soon prove too great for the world's food resources. The curricula of the schools has responded to these and to other similar problems by adding new courses, by altering the content of old offerings, and by enlarging the scope of others.

In order to improve curriculum, schools have turned to universities and professional associations for assistance. These agencies, responding to the same societal forces that press on the schools, have produced an unprecedented number of curriculum studies. In 1962, the National Education Association Project on Instruction reported forty such studies and position papers; twelve in science, thirteen in mathematics, four in English language arts, five in modern foreign languages, and six in social studies.[3] These studies, prepared in isolation from the total school program, have often created problems in articulation, stimulating additional course revision.

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[1] Policies and Programs: Public Secondary Education in Maryland. Baltimore: State Department of Education, 1964, p. 59.

[2] Ibid.

The schools have used the results of these studies, altering the content of such subjects as mathematics, science, and social studies, and adopting a new method of teaching the modern foreign languages. They frequently begin subjects at lower grade levels, and offer them for more consecutive years. The number of subjects taught to students earlier in their school courses is particularly significant. The NEA Project on Instruction reported that one-fifth of the nation's elementary schools offered advanced mathematics in lower grades.[4] They also introduced more complex material in science, reading, and social studies earlier. In secondary schools, also, the Advanced Placement Program and honors courses have influenced local decisions to begin a subject sequence or to teach a subject, in an earlier grade. Fifty-five percent of the schools surveyed by the Project on Instruction reported courses taught earlier in the secondary grades.[5]

Federal school legislation has also influenced curriculum change. Despite Federal assurance that curriculum is solely the responsibility of state and local school systems, categorical aid of the type represented by the National Defense Education Act of 1958 has stimulated change in courses in modern foreign languages, mathematics, and science, by providing material and equipment and by supporting training institutes for teachers. The newly expanded National Defense Education Act, and the new Elementary and Secondary Education Act of 1965 will hasten change in other subjects as well.

Organizational Change and Changes in Teaching Methods

Another way in which education has changed is in administrative organization for instruction. Schools have grouped students in new ways, both in elementary and secondary schools, attempting to improve teaching and learning through homogeneous grouping by intelligence or achievement. Another major trend in elementary schools is the ungraded plan. In many schools semi-departmentalized plans which employ subject specialists to complement the skills of the regular classroom teacher have altered the traditional self-contained classroom.

Team teaching has been adopted by a large number of schools. The National Education Association has estimated that three out of ten school systems in the United States will have team teaching programs in the 1965-66 school year.[6] Team teaching, with large group instruction, seminar type discussion sessions, and individual study with a wide variety of instructional materials, has added great impetus to a major effort of the schools, the individualization of instruction. School systems which initially developed individualized programs to meet the needs of gifted pupils, retarded learners, and other exceptional children, have extended individualized methods to reading instruction for all children, and to other subjects as well.

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[3] Dorothy M. Fraser, Current Curriculum Studies in Academic Subjects, Washington: National Education Association, 1962, pp. 6-85.

[4] The Principals Look at the Schools: a Status Study of Selected Instructional Practices. Washington: National Education Association, 1962, p.5.

[5] Ibid.

[6] "Spirit of Change Sweeps Schools," The Washington Post, Sunday, August 22, 1965, Section L, p.7.

New instructional materials, also, have effected changes in teaching methods. The use of motion picture films, filmstrips, recordings, and other audiovisual materials brought new techniques of instruction. Now schools employ programed materials for teaching machines, 8 mm. film loops, television, and even computers as aids to learning. Soon videotape recorders and such new developments as the videodisc may influence teaching techniques. Materials of instruction, and the agency which administers them, the school library, have become essential parts of the modern curriculum.

The School Library Function

Though there has been confusion in the past concerning the school library function, in the educational revolution of today it has crystalized. The function of the school library is to support the instructional program of the school, supplying instructional materials and equipment and appropriate related services to student and teachers at all levels wherever and whenever they are needed. The Council of Chief State School Officers has called the school library a part of instruction.[7] To perform the function of undergirding the curriculum, the school library must itself be a center for, or share responsibility for, all instructional materials.

Recently the concept of the school library function has expanded so that in more progressive school systems the school library is defined not only as a center for materials and services, but also as an agency responsibile for coordinating the instructional materials program throughout a school. This kind of agency not only provides printed and non-print material and equipment from its own resources, but also secures suitable materials and programs from outside the school for use in both the library and the classroom. These materials or carriers of information may be secured in physical form, or as radio and television broadcasts by either closed or open circuit transmission. Modern school library service is not simple, but a sophisticated and complex system of services.

School Library Service in Howard County

All Howard County schools have a centralized library in the limited sense that they have a library room and an organized collection of books, but only the secondary schools employ professional personnel who can offer the program of services which distinguish school libraries from mere centralized depositories of materials. None of the school libraries in the county have achieved levels recommended in the standards of the American Association of School Librarians, nor in the standards of the Maryland State Department of Education. In October, 1964, the 18 Howard County Schools had book collections averaging 5.7 books per pupil. The collections ranged from 1,799 books in the county's smallest elementary school (5.5 books per pupil) to 7,575 books in the largest secondary school (5.7 books per pupil). In the Annual Report and Audit, Howard County Public Schools for the year ending June 30, 1964, the first part of which was devoted to the school library program, no report is given on materials other than books, but in a section devoted to library quarters, the report lists space for listening and viewing, and space for equipment storage and distribution, as goals toward which the county is working. In the section of the report on materials, a recommendation from the state standards for auditory and visual materials in school library collections is quoted, but the paragraphs which follow discuss only the program to increase the book collection.

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[7] Council of Chief State School Officers. Responsibilities of State Departments of Education for School Library Services; a Policy Statement. Washington: The Council, 1961. Foreward

In 1964-65, only the six secondary schools had librarians. These employees meet the certification requirement established by the Maryland State Department of Education. The two largest schools also have teachers assigned part-time to school library service. None of the libraries have non-professional supporting employees assigned full-time, but the central Library Services Department provides limited clerical assistance to elementary school libraries.

Howard County has shown an increasing interest in improving school library service. In 1963-64 it spent approximately $3.85 per pupil for school library materials and supplies. It employs a school library supervisor to provide leadership and guidance to the schools. Yet in October, 1964, its average number of books per pupil was less than the 6.2 volumes per pupil reported by the U.S. Office of Education as the national average for 1962-63.[8]

The picture of school library service in Howard County is one of traditional programs supported by inadequate collections, with staffs that are too small, or, in elementary schools, lacking. The school library supervisor, in a paper entitled "Library Standards in Columbia," has outlined a plan for school libraries which reflects state and national standards. Yet the present Howard County school libraries have not achieved these standards, nor, if they had, would they provide the range of materials and services needed to support teaching of high quality in a modern curriculum.

The Possibilities of Columbia

The construction of the planned City of Columbia provides the Howard County Public Schools with an opportunity to make rapid progress in performing the library function through the creation of a non-profit corporation to provide communication and information services to libraries, schools, and homes in Columbia. By cooperating in the creation and management of such a corporation, Howard County could secure similar services for the other schools in the county and avoid, thereby, the pitfall of creating two classes of schools within a single system. But our purpose here is not to consider arrangements to blanket the county schools with services from a new kind of agency, but to develop a plan for library service in the schools located in Columbia, taking advantage of services from a Columbia communication service agency.

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[8] Richard L. Darling. Public School Library Statistics, 1962-63. Washington: Department of Health, Education and Welfare, Office of Education, 1964. p. 13.

A Plan for Library Services in the Schools of Columbia

A plan for library service in the schools of Columbia should be based on certain guiding principles:

1. Since the school library function is to support instruction, the needs of the school curriculum control the nature of library service provided to schools.

2. Since the use of materials and information depends upon accessibility, appropriate collections of frequently used materials should be located in each school.

3. The Columbia communications service agency should make more resources accessible to local schools and libraries than they could otherwise obtain if it is to fulfill its logical function. These resources would include expensive, infrequently used materials, such as films, radio and television instruction, and so forth.

A library plan for the schools must include service for elementary schools, service for secondary schools, and service for the entire school system. Though college library service could be included in this discussion, since the first college in Columbia might well be a Howard County Junior College under the county Board of Education, this paper discusses only elementary and secondary schools. The college library function requires separate consideration. The service to schools will be divided into two sections: (1) library service to neighborhood (elementary) schools, and (2) service to village (junior and senior high) schools. The discussion assumes the present 6-3-3 plan of school organization, since a 5-3-4, or similar plan would not change the nature of library service needed (although school sizes would, of course, vary).

Library Service for a Neighborhood School

Each neighborhood school in Columbia will have a relatively homogeneous pupil population because of the nature of the neighborhood itself. With each village divided into 9 or 10 distinct and separate neighborhoods, each with lots of similar size, and houses within a relatively narrow price range, the pupil population should represent similarly limited socio-economic levels. For these reasons, each neighborhood school will have a collection somewhat different than the others. At the same time, other factors operate to create more similarities than differences. Differences in ability and in basic intelligence will probably be as great as in any other city, but the pupils in a city as complexly organized as Columbia will be more likely to have common cultural experiences. Each neighborhood school will be approximately the same size as the others. Each school will follow a basic curriculum pattern adopted by the Board of Education for all the elementary schools of Howard County. Each Columbia neighborhood school will be located in a neighborhood center, of which it is the focal element. A nursery school and kindergarten, and a child care center will be nearby. The neighborhood center, in other words, is planned to bring together a maximum number of the younger children for educational experiences. The library service in the neighborhood school should extend to children in the elementary school itself, to the kindergarten, whether separate or a part of the schools, and to the nursery school and child care center.

How the library function relates to the educational needs of children determines the collection and service. All those materials which are used frequently and have a reasonably low cost should be a part of the school inventory.

The collection should include:

1. A book stock of at least 6,000 volumes selected to meet the needs of the instructional program with a somewhat larger percentage than usual of books for very young children. These books should be selected by the professional staff of the school, with advice from those responsible for the child care center and nursery. Though the school system should pay for the bulk of this collection, it is reasonable to expect that either the public library or the Columbia communication agency would subsidize the cost of those books used primarily by pre-school children. The Columbia communications service could provide a collection of materials on child care, child growth and development, and so forth, for the use of parents. The Columbia communication service agency should purchase, catalog, and process all materials.

2. Other printed materials such as pamphlets, magazines, newspapers, and flat pictures.

3. A collection of filmstrips for use in the classroom or library. A considerable number of these filmstrips should be selected to provide service to the pre-school agencies, although the majority would relate to the school curriculum.

4. Slides for class and individual use.

5. Tape and disc recordings in sufficient quantity to support the school program and for use with pre-school children.

6. Transparencies and overlays related to subjects taught in the school.

7. Maps, charts, and globes related to school courses.

8. Other instructional materials such as simple machines for science, exhibits of rocks, etc.

9. Curriculum-related 8 mm. film loops.

10. Projectors, tape recorders, record players, multi-headset listening stations, individual and small group filmstrip previewers.

11. Equipment to produce transparencies, to mount pictures, and to create other instructional materials.

12. Television and radio receivers. The television receivers should have the capability for both closed and open circuit reception and for both VHF and UHF. The program should also provide a television receiver for each teaching station in the school.

13. Projection screens in each teaching station and in the library.

The facilities for this program should provide a suite of rooms rather than the single reading room library common in elementary schools. The facilities should include:

1. A large reading room broken up by dividers to form smaller reading areas for use by different groups at the same time. A portion of the study space should be devoted to carrels designed for young children.

2. Listening and viewing areas with carrels or cubicles equipped for individual study with non-print materials. These areas may be separate rooms or a part of the reading room.

3. An area suitably equipped for reception of programs transmitted from the Columbia communications service agency.

4. An equipment storage room.

5. A work-materials preparation area for use by the library staff, the teachers, and the pupils to make transparencies, prepare exhibits, and so forth.

6. A communications control area for transmitting tape and disc recorded materials to classrooms over an individual classroom control intercommunication system or automatically by a dial system.

7. Proper wiring and conduit throughout the school to provide for reception at each teaching station of transmitted information, both audio and visual, from the school library and from the communications services agency.

Although the school library will house locally inventoried materials and equipment and is the instructional materials center of the school, it is only the center and not the whole of the communications service. In relation to the central agency, it is the coordinating agent, connecting the local part of the service to the centrally supplied service so that a unified program for the support of education of boys and girls, pre-school through the elementary grades, results. The staff will provide guidance and instruction in the use of materials and equipment, aid in planning the use of materials for instruction, create materials, arrange to borrow materials which are sent out from the central agency, such as 16 mm. films, and secure and disseminate information concerning the availability of programs, instructional aids, and instructional series, which can be transmitted direct from the communications service agency.

The materials staff of the neighborhood school should consist of at least two librarians, and more if evening service and summer service are provided as many school systems now do. A staff of this size is essential for the kinds of services described, and is consistent with the Maryland State Department of

Education staffing standards. These librarians will need to have education in curriculum, the production of materials, in the use of non-print materials, and instructional equipment, and in the use of electronic devices for instruction. The professional staff must be supported by a technician skilled in the use of equipment, and by a clerical staff to handle library routines, and the booking of materials from the central agency. An important service of the central agency will be in-service education programs to provide librarians and supporting personnel with the knowledge and skills needed for the administration of this special kind of school library program.

The neighborhood library, housed in the school, should be the administrative responsibility of the school, which should pay for, and hold title to its local inventory. Assuming that the Howard County Board of Education would be one of the sponsors of the Columbia communications service agency, represented on its board of directors, and a contributor to its support, it would be logical to expect that the school system would pay for central agency services according to a pre-agreed formula or contract, rather than on a complicated fee basis for each service rendered. Both local funds, including general state aid, and Federal funds from Title III of the National Defense Education Act of 1958 and from Titles II and III of the Elementary and Secondary Education Act of 1965, might be used either for supporting the local school libraries or for contributing to the central agency budget. The school system would not have direct control of the central agency, but would have a voice in establishing policy through its representation on the agency board, along with the public library, the park and recreation association, and business and industry.

Library Service for Schools at the Village Level

Factors relating to library service to schools at the village level in Columbia are more complex than at the neighborhood level. Each village may have two schools, a junior high school and a senior high school, side by side, a public library, and other public-use facilities. Though the weight of professional opinion and experience are against a combination of school and public library service within a common facility, the carefully planned nature of each village provides a powerful argument for considering Columbia a special case. The location of two schools, adjacent to each other and to a branch public library provides an opportunity to create, not a merged facility, but rather overlapping facilities in one building, so that three programs are served in part with collections exclusively their own, in part with shared collections, and in part by the same central agency.

The location of a building to house three library programs should provide each school and the public convenient access to those areas of the library from which they receive primary services. The library would serve each school in study areas located in the part of the library closest to that school. Areas of the library intended primarily for the general public would relate to other public use facilities so that the public library patron could use the common parking facilities, and could enter the library without using the school-related portions of the building. Connecting the library physically to both schools would enable students and teachers to reach the library more easily during inclement weather.

Common service areas would supplement the three distinct ones. Areas to house general reference collections, non-print materials and equipment, and to accommodate the preparation of new materials would constitute the core of the library. This part of the library would house the outlets for closed circuit television and audio connection with the central agency, though each teaching station in the junior and senior high schools should have direct access to the communications network, and should have equipment for classroom use of materials.

The collections of the library should meet the needs of each group served. The teachers in each school should select the curriculum oriented materials to serve the school's instructional programs. The staff members of the village library would select the general collection for public use on the same basis as for any public library. Each collection should meet recognized quantitative standards for a separate library of its type. Duplication of titles is unavoidable, but no more serious a problem than in any library with heavy demands for certain works. Reduced duplication of reference materials will enable the village library to stock a broader range of titles at no greater cost.

Sharing will reduce duplication of audiovisual materials and provide the funds for a richer collection. Staff members could secure urgently needed materials from each section of the library for use in another section as long as the materials were not in use. The combination of facilities must provide better library service than would result from separate libraries, and in no way reduce service by merely attempting to cut costs through eliminating duplication of materials.

Staffing the village center library presents problems, but not insurmountable ones. Each of the service areas must be manned by staff with appropriate qualifications. There is little likelihood that the professional staff will be smaller than in three separate libraries. A library serving two schools and the general public will be open more hours per day than either a traditional public or school library. It must open early to serve the school and stay open late to serve the public, including the students and teachers of the school. The problem of serving students in a public library will be eliminated because the school collections will be available in the evenings. However, the schedules of librarians serving the schools must provide service beyond the formal school day.

The supporting staff, clerical and technical, would not need to be duplicated, providing a real saving. The same technical staff can serve school and public needs in the audiovisual and communications center, and the clerical staff can work throughout the library. Since the Columbia communications service agency will purchase, catalog, and process all village inventoried library materials, the clerical staff would function chiefly in service to library patrons. The central agency would provide in-service education programs for both professional and supporting personnel.

Administrative responsibility for the village library presents the thorniest problem. Grinton I. Will, in his study of the possibilities for combining school and public library services in Levittown, New Jersey, recommended separate administrations in one library building, with a common audiovisual service provided by the school.[9] In Columbia, the proposed communications service agency suggests another solution, that direct administrative responsibility be placed in the central agency, or, at least, that administration of the common areas, and coordination of the special areas be central agency responsibility. Giving complete responsibility to a single agency would provide a more manageable service, but would require planning so that the special needs of school and public service are protected. This plan would mean that both the Howard County Board of Education and the Howard County Public Library contract with the central agency for direct services from the agency, and for administration. In the event that state laws, regulations for certification, or retirement benefit plans require that professional staff be employed by public agencies, the librarians could be hired and paid by the schools and the public library, but assigned to an agency administered by the non-profit corporation under contract.

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[9] Grinton I. Will. Feasibility Study of the Combination of Public and High School Library Services in Levittown, New Jersey (Winningboro). Yonkers, N.Y.; August, 1963, p.18.

Financial support for the village libraries would ultimately come from the Howard County tax payers, and from state and Federal aid where applicable. Both the public schools and the public library would support the central agency and receive services commensurate with their participation in that agency. If the central agency supplies the materials and equipment for local inventory from a common budget, the problem of who pays for what is eliminated.

The cost of construction of the library facilities is a separate problem. For Levittown, Will proposed that the public schools build the library building in consultation with the public library and lease the public library space at cost to the public library board.[10] Under Maryland law it would be possible for each board to contribute its fair share to the cost of buildings and to lease them to the central agency to operate. A precedent for construction of a shared building has been set in Montgomery County, where the county constructed an elementary school, a public library, and a public health facility in one building. Since both the school board and the library board are dependent upon the Howard County Commissioners for both capital and operating funds, financing a common building is probably less difficult than in states with independent school systems.

Direct Services from the Communications Service Agency for the School System

In addition to serving village libraries and neighborhood schools with information by closed circuit, and purchasing, cataloging, and processing of materials, the Columbia communications service agency can furnish numerous valuable services for the entire school system provided that the county installs cable tie-in to schools outside Columbia. Its television facilities could then be used to present in-service education programs to all the Howard County schools, both those in Columbia and in the rest of the county. In fact, the central agency facilities can be planned to work with the proposed state ETV network, bringing the state services to the county schools and to Columbia, and can originate television courses using Howard County teachers to provide special subjects and demonstrations for classroom use.

Computer services, including information storage and retrieval could provide professional education information for the school system. Such computer services, coupled with a curriculum laboratory and professional library would provide rapid access to a broad range of material related to any ecucational problem of concern to the schools. The Columbia Communications Service Agency could supply computer services for statistical and administrative records. It would also enable the school system to establish a vocational curriculum related to computer occupations.

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[10] *Ibid.*, pp. 18-19.

Conclusion

With the creation of Columbia communications service agency, a non-profit corporation, with Board of Education participation in its management and support, the Howard County Public Schools secure an opportunity to develop information services of a high quality for its teachers and pupils. While the service would include elements of traditional school library programs, a new dimension is added so that all materials needed in the instructional program not available in individual schools can be secured from the central agency.

To make such services available to the entire community, both the public schools and the public library would need to delegate a measure of their authority to the communications service agency. The old fears concerning combining public libraries with school libraries are bound to arise. Most combined libraries have failed to serve both functions adequately, but under the plan proposed for Columbia, a service is contemplated that safeguards the interests of the school and of the public library patrons, and adds to the potential of both. In effect, the village library is neither a school library, nor a public library, but a library of a new type, administered by a new agency, which can meet the needs of the entire village population, in school or out. Though the neighborhood library is primarily a school library located in a school, it is more, for it serves the pre-school child as well.[11] The City of Columbia offers the Howard County Public Schools, through a cooperative venture, the chance to show how library service can support education for the entire community, pre-school, in school, and beyond school.

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[11] Private schools have not been included in this discussion. If private schools are built within Columbia, there seems to be no reason they could not participate in the services of the Columbia communications service agency. The village and neighborhood libraries could serve them, though less adequately than they serve the public schools. In the event that shared-time programs are developed, the village library, serving both schools and the public already, is ideally suited to serve this public-private school cooperative program. Closed-circuit television by cable to private school classrooms would be feasible, since the school would pay for its own installations. Other services could be contracted.

III.

C. Proposals for Service to the Community

The prospect of developing a unique public library service exists in unparalleled form with establishment of the planned community of Columbia in Howard County, Maryland. The planners, Community Research and Development, Inc., have envisioned a community program of services which aims at providing a full measure of educational and cultural opportunities for all. Of first importance is a review of the functions of a library service adequate for such a community.

Traditionally stated, if not achieved universally, have been five major objectives (or functions) of the public library: Education, research, information, recreation (leisure activities), and aesthetic reinforcement. The school library and the academic library also acknowledge these objectives as important to and reflective of their general purpose; therefore, with minor variations these five words do indicate the fundamental approach taken by libraries for development of resources and service programs. The latest statement of public library service goals, Public library service, a guide to standards...(ALA, 1956) merely enlarges and reinforces these five basic points.

The educational functions of a modern library should relate its program to all levels of formal and informal learning activities which a community supports. Research and information services offered should reflect the professional skills of a trained staff which can relate the library's resources to user needs. Recreational functions of the library should augment and enlarge opportunities found in the community, many of which are influenced by the widespread availability of mass media.

To serve Columbia adequately, a library complex taking into account services to be rendered by all types of libraries should be able to deal with all types of users, regardless of age, levels of schooling completed, occupations, or needs for knowledge. The library complex should itself provide a wide range of resources as well as be able to call attention to and draw upon more specialized resources available from other institutions serving the area. A statement of goals for such a complex should include at least the following:

1. provide general subject information for all ages;

2. serve the community's total educational facility by coordinating procurement, processing, and dissemination of all forms of useful materials;

3. make available special materials (bibliographies, abstracts, translations, etc.) from the best and most complete resources anywhere;

4. serve as a coordinating center and clearing house for Howard County in developing and assisting or directing evaluation activities pertaining to the use of all forms of materials for information, education, recreation, and research needs.

Even though a planned community, Columbia will serve many types and levels of personal backgrounds. Since Columbia will provide a high ratio of jobs to the size of its population, its library might expect to deal with a clientele more diverse than usual including students and professional specialists as well as semi-skilled and unskilled laboring groups. Within fifteen years, library patrons within the educational constituency will range from preschoolers to college students, within a vocational constituency from retail and service personnel to corporation and R & D executives, and from newly-weds to golden age patrons. The satisfaction of such a broad range of probable demands for a population of perhaps 120,000 would present challenges to any library.

The public library system of Howard County is currently supported at minimum levels. Its budget for 1964 totaled $66,635 for a population of 46,830, thus providing a per capita expenditure of approximately $1.42. Of this amount some $46,204 was received from local funds, thus reducing actual support received from the county to slightly over $1.00/capita. The library book stock is estimated at 35,000, or approx. 0.75 vols/cap. During 1964, circulation was 260,936, with a per capita circulation of approx. 5.6 vols. In summary, the picture revealed in the librarian's annual report suggests a typical but still sluggish pattern of development toward improved levels of service which eventually will become consistent with state and national standards. The characteristics of the county's population and the county pattern of rural living indicate that the library will face a continuing struggle to upgrade its services, depending upon receipt of increased funds, in the face of county needs other than for the library.

The building which serves as headquarters for the present system is approximately three years old. It is an attractive structure and one which is easily accessible to County residents. Bookmobile service is provided on a two-week basis with 64 stops. (Obviously, such a large number of stations means that the time available for each stop is limited - averaging one-half hour each.)

Several progressive features of the present library system should be noted. Processing is done by the Eastern Maryland Cooperative. The library is an active member of the Metropolitan Maryland Library Service group, which provides free interchange of borrowing privileges among eight library systems. Howard County uses and promotes interlibrary loan and reference request services in the area working with a variety of more specialized libraries serving education, business and government. The Board of Trustees and their librarian are well aware that the Columbia project will yield both a challenge and many problems with which the library must cope.

One "threat" to present patterns of development arises from the fact that the population and living plan in Columbia may differ markedly from the rest of Howard County. If these differences are present, Columbia City may well require a library to serve its individual needs which is much larger than anything likely to be available for the remainder of the county. Nor will mere enlargement of the library's scope meet the special socio-economic and educational needs which Columbia will present. Under county library rulings, no special dispensation is possible which will permit Columbia to establish a local independent library. Therefore, the library system of Howard County faces a choice which will call either for attempts to extend service from the present headquarters, or plan a new unit capable of serving urban needs.

On January 5, 1965, the Howard County Library Board indicated that it would not wish to relinquish any control of "public library activity in Howard County..."[1] Respecting possible school-public library relationships, the text of a statement issued by Marvin Thomas, librarian, and Miss Olive Mumford (Howard County Board of Education School Library Supervisor) indicates that a cooperating,but (in light of the Board's position) independent network of library service,might afford the best plan possible to bring adequate service to Columbia, and at the same time maintain adequate service for the remainder of the County.[2] The joint statement outlines a set of standards for both school and public libraries.

It is the consultants' view that, if Columbia City is to realize the philosophic objectives of its planners and the inherent goals of both schools and library service units, a new single agency which would serve all citizens should be established. Such an agency (or complex) should render two levels of library service to Columbia and Howard County. First, it should offer general service which would provide through an appropriate number of local centers all forms of library media including books, pamphlets, periodicals, phonorecords, films, etc. The location of such library units in Columbia will be in the villages and town center. A general service outlet is not proposed for neighborhoods.

Library units serving each village will be stocked and staffed to provide the best service possible, including reader guidance, reference service, and the full variety of materials needed. Their size should be generally consistent with standards set for communities of 12,000. They should be arranged physically within a school-public library building, so that all ages and types of readers may come directly into contact with those materials having value; it is suggested that the typical organization of library departments by age-level be eliminated in village centers. Since the junior-senior high school libraries at the village level will share the total physical space, and will be fully stocked as resource centers, students will have ample opportunity within school facilities to become familiar with a variety of materials which are curriculum-related as well as of an enrichment type; for the public library activity to maintain traditional separations of space by presumed age or grade level requirements seems unwarranted.

The plan of construction for Columbia calls for nine villages when the community has reached full size. However, it appears unlikely, (and, indeed, unnecessary), that there should be nine village center libraries. A typical library system serving a community of 120,000 would not contemplate the construction and operation of nine separate branches since the costs of staff and of duplicating materials would be excessive even under the most favorable of financial conditions. Therefore, it is suggested for Columbia, that only as many village center libraries be organized and operated as there are junior-senior high schools located in these village centers. While it may prove true that the village center library clientele will be larger than the village population planned, because some non-Columbians may use a village facility, it may also prove true that some village library units will attract more patrons than others. Further, since the Howard County library must serve the county's entire population, there must always be taken into account the needs of non-Columbia residents who also have rights to improved and adequate library service.

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[1] Library Standards in Columbia (undated report of Plan Developed by Mr. Marvin Thomas and Miss Olive Mumford)

[2] Op. cit.

Ideally, each village library unit in Columbia would be provided with a collection of approximately 25,000 volumes, and be staffed by at least two professional personnel in addition to supporting clerical and maintenance staffs. While it is likely that village center libraries will be quite similar, some variations may be considered in planning collections for these centers. For instance, depending upon actual need and interests of village residents, some or all of the centers might build up specialized collections, i.e. one village library might acquire a rich collection in political or social science while another might well stress folklore, art, and music. Sales areas for paperback books, installed in each village center library, could represent both general collections and specialized interests.

In addition to building up their collections and performing circulation functions, each village center library should develop a reference collection of a nature suitable to the needs of users. Although few library units serving 12,000 persons have either such materials or offer a reference service. Columbia's libraries should be capable of doing so if they are to achieve their special aims. Since each village library will be related closely to junior-senior high school resource centers, it appears logical that student use of reference tools will be required. Such needs imply that adequate supplies of periodicals in either print or microform must be available in sufficient quantity. The tie proposed between the school resource center and the village library can help reduce to a minimum unnecessary duplication and stockpiling of materials which are little used. For the general nonstudent user, a village center can be expected to supply reference tools in sufficient depth to meet his interest and ability levels. Again, while duplication of such collections can be expensive, such resources are indicative of adequate service goals and responsibilities. The village centers, as mentioned above, may well be used by non-resident patrons who should find in a modern library these useful tools.

The library program located in the Town Center should consider establishment and servicing of a small general collection (akin to a browsing room or popular library collection) for those workers in the central city complex who are not residents of Columbia and who would, therefore, be less likely to use village centers. Such a service could help to increase the visibility of the library in the town center as well as throughout the entire community.

Major features of the town center library should be its special research and bibliographic services. These specialized functions are aimed at supplying both individuals and institutions with any and all material needed beyond the scope of the collection of a library serving 120,000 population. Its own collection will consist chiefly of handbooks, directories, subject encyclopedias, and special indexes (to periodicals and other sources); this collection will, however, be small in comparison to the general book collection. A distinctive feature of the special service program will be the availability of staff specialists whose training and experience can provide in-depth solutions to a wide variety of complex requests for technical information. These specialists may be asked to furnish technical reports or reproductions of them; abstracts, reviews, and translations; machine-produced bibliographies; literature searches; and consultant help to meet the needs of Columbia's industrial, commercial, and educational institutions.

Columbia is situated fortunately within an area rich in these resources required to make such service possible. Nearby are The Applied Physics Laboratory, (J.H.U.), and its important engineering/math/physics resources; W. R. Grace Co. and its chemistry materials. The personnel managing these two facilities have expressed willingness to cooperate to the fullest limits of their resources. Located in the Baltimore area are the Enoch Pratt Free Library, the Johns Hopkins University Library, and several historical, art, and other collections of special materials in the humanities. In Washington, D. C., and adjoining areas are some of the finest special libraries in the nation in addition to the Library of Congress. With such a wealth of collections available, the special service unit of Columbia's library complex can certainly arrange to provide at reasonable charges all manner of interlibrary loan and hard copy usage to meet the need which might be expressed.

The town center library unit, which might well be considered a future headquarters for the Howard County library system, has unique opportunities as well as the responsibility for satisfying many educational objectives. In the town center will be located an adult academy and community college; the latter institution will be the county's higher education facility. Service to these two "upper level" educational agencies should be offered on as broad a base as is possible. The adult academy, as conceived by Community Research and Development, Inc., will aim to provide a continuing education program for all types of community needs, both those relating directly to formal educational offerings as well as those which originate from informal activities. Present plans for this academy are based on its proposed proximity to a future hotel or inn and its nearness to the community college so as to provide a most unique situation affording both optimum dining and meeting facilities for all activities.

Whether or not the academy will house its own collection of materials, the town center library should be proposed to provide all manner of materials related to academy programs. Indeed, it is to be hoped that members of the library staff will be active participants in the work of the academy through regular participation in planning, consultation, and leadership services.

The community college library may have its basic needs supplied by the educational authority, the Howard County Board of Education, which will direct the college program. However, it should be expected that the college library collection, staff, and services will be an integral part of any central procurement, processing, and distribution activity which serves all libraries in both Columbia and the county. The nature of the college program will direct the emphasis and the direction of its library: if the chief curricula reflect a liberal arts (or other broadly-conceived orientation), of necessity the library must become the equivalent of a good college general collection. On the other hand, if the program is essentially a continuation of high school work into the 13th-14th years, collections may be more limited. One section of the town center library might be set aside to provide college students opportunities to work with basic reference tools which the special service program (described above) will acquire; or, the town center library may actually provide direct reference service to the college on a contractual or fee basis. Members of the college faculty might reasonably expect the proposed town center library to furnish bibliographical assistance in building personal collections on various subjects, etc.

An additional responsibility of the town center library should be central control of technical processing activities. Such activities could be housed physically in the library's quarters; on the other hand, less expensive and equally accessible space might be utilized in that portion of Columbia which houses other "warehousing" service.

Space requirements for the town center library must reflect the total operation, since one feature to be planned from the beginning will be use of data processing equipment for all aspects of the technical processing activity which can be adapted for such machines. Further, future tie-ins to dataphone or other data dissemination systems may provide the library with time-saving, more economical records originating from a library system in the Washington-Baltimore corridor. At this writing it isn't possible to prescribe the optimum space allocation for a technical processing center other than to remind the library authority that this service should have the capacity to serve school, college, special, and public library processing needs; the space assigned, therefore, should be flexible as well as generous.

It appears logical that the town center library should provide all possible connections to the computing center of Columbia, if it does not actually house the equipment. The special reference and bibliographical assistance service already described, as well as technical processing work, will require access to such electronic data processing units. If a future commercial or other organization were to plan installation of such equipment, thought should be given as to whether or not the communication service agency might make the decision as to whether the library will retain any equipment, or will use remote input/output equipment with primary units located elsewhere. As suggested elsewhere in this report, if the data processing operation is placed outside of the Town Center, the library's space requirement may be lessened so long as facilities for direct tie-in, on a shared-time or some other basis, is provided.

Consideration should also be given to the idea that the town center library could well become a center for communication materials, production and distribution of closed-circuit television programs for schools and other TV materials; a remote control book utilization service via TV (see Section II), etc. One great advantage of centralizing all production activities within library space is that such a concentration can make economical and efficient use of library tools - indexes, catalogs, inventory control, etc.- needed for all types of library and communications service. Again, if space is not too expensive, the single physical unit may provide best the total library/communications center focus; indeed, the concentration of these functions in such a manner would help to point up the role of the library in its fullest dimension.

It should be noted that the town center library has not been described as a typical regional service center having a large collection of resources not available at village library centers. There is no reason why this center should duplicate the traditional headquarters library if school resource centers in villages do materialize as recommended. The mere quantitative adequacy of a central library is no reflection of its ability to serve adequately a given set of objectives; the general thesis of this report is that Columbia's needs will be atypical from those of ordinary communities; hence, its main library center may also have to be non-traditional. Therefore, differentiation between Columbia's library center and that of another community library will be on the basis of services offered rather than on the basis of duplication of materials.

The basic collections of village library centers must, of course, have high quality and wide range; it should be possible to provide adequately for the general, non-school patron with approximately 25,000 volumes if these collections are not required to provide the usual ratio of children/adult titles, which in most libraries adds up to approximately a 50-50 division between these two age levels.

Mention was made earlier of paperback collections to be offered for sale or perhaps rental, in village library centers. Control of the selection and dissemination of titles for such a service should rest in the Town Center library technical processing center where responsibility for all selection, acquisition and processing will reside. Actual distribution of paperbacks as well as other materials from the processing center to the various facilities is presumed to be a possible function of the Minibus public transportation system which is to serve Columbia. It should be pointed out that this mode of distribution may not serve adequately both patrons of the bus service and patrons of the various library agencies. It may be necessary to provide a special fleet of delivery vehicles, or establish extra Minibus runs to accomplish the distribution needed by villages and by the town center to effect an exchange of both school and library materials. Indeed, a condition of the location of the processing center should be that rapid and dependable transportation (delivery to and distribution from) is readily available.

How should such a library be organized and administered?

It is fair to say that extreme variations from the traditional pattern of library organization are rare, and in many cases unsuccessful. One such pattern is control of the public library by the school authorities; examples of such libraries are to be found in Kalamazoo, Michigan, Kansas City, Missouri, and in several libraries in Indiana. In the other side of the coin, one must search long to find a school library completely under control of the public library.

A recent study of a possible combined library service for Levittown, New Jersey[3] provides one kind of solution to the problem of administering a single resource in a planned community. In that report, the consultant suggested a single physical facility be administered jointly by the schools and the public library under a policy of close cooperation. This is the essence of what is required to meet public library needs in Columbia. The chief difference in recommendations offered is that, for Columbia, the suggestion is a new "third party" which will administer library service under contract.

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[3] Will, Grinton I. Feasibility study...of public and high school library services in Levittown, New Jersey. The author, 1963.

APPENDIX A -- *Bibliography* (Partial Listing)

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APPENDIX B -- Among Persons Consulted ...

Edwin Castagna	Director, Enoch Pratt Free Library
William Finley	Vice President, Community Research and Development, Inc.
Mae Graham	Supervisor of School Libraries, Division of Library Extension, Maryland State Department of Education
Wallace Hamilton	Historian, Community Research and Development, Inc.
Elizabeth B. Hage	Director, Prince George's County Memorial Library
Mary R. Hovet	Director of Instruction, Howard County Board of Education
Isobel P. Lynch	Chief of Extension, Enoch Pratt Free Library
Norman Finkler	Deputy Director, Department of Public Libraries, Montgomery County
Barry L. Schuttler	Community Research and Development, Inc.
James A. Sensenbaugh	State Superintendent of Schools, Maryland
Robert S. Shaffner	Assistant Superintendent of Schools, Howard County Board of Education
Grace Slocum	Assistant Librarian, Enoch Pratt Free Library
Nettie Taylor	Director, Division of Library Extension, Maryland State Department of Education
Marvin Thomas	Director, Howard County Public Library

APPENDIX C -- Summary Guide To Recommendations

1. To invite commercial studies to determine costs of the proposed CATV and related communication systems and optimum means for their installation and operation in Columbia (II, B, pp.15-17)

2. To establish a Columbia Communication Service Agency (II, C, pp.20-23)

3. To launch necessary design and cost studies anticipating construction and operation of the first village library complex (III, B, pp.34-5; Appendix D)

4. To make available a full range of modern communications technology (II B)

   a. TV services (p.7)
   b. Audio services (pp.8-10)
   c. School Equipment and facilities (pp.10-13)
   d. Instructional materials (pp.13-14)
   e. Home services (pp. 14-15)
   f. Service to business and industry (p.15)

5. To implement the School Library Function (III B)

   a. Guiding principles (p.31)
   b. Elementary School service (pp.31-34)
   c. Junior and Senior High School service (pp.34-35)
   d. CCSA services (pp.36-37)

6. To implement public library functions (III C)

   a. Town Center program (pp.41-42)
   b. Relationships with the Academy, college and other educational and cultural agencies (ppp.42-43)
   c. Village Center program (pp.40-41; 44)

APPENDIX D -- An Estimate of Costs For The First Village Center Library Complex*

The establishment and operating budgets displayed below are based on the following assumptions:

1. That the Village Library service area will have a population of from 12,000 - 15,000 persons.
2. That the Junior High School will have an enrollment of about 800 students.
3. That the Senior High School will have an enrollment of about 1,000 students.
4. That school library facilities will be operated by appropriate personnel from 8:00 a.m. - 4:00 p.m., Monday - Friday, during the academic year.
5. That community library services will be available 46 hours per week with services offered

   1 p.m. - 9 p.m. - Monday-Thursday
   1 p.m. - 6 p.m. - Friday
   9 a.m. - 6 p.m. - Saturday

   Community Services Librarians and clerical personnel would be on duty during these periods.
6. That all personnel would be on a 38-40 hour week.
7. That salary improvements would be based upon an annual increment of four percent.

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* Estimates prepared by Mr. Keith Doms, Director of the Carnegie Library of Pittsburgh.

VILLAGE CENTER LIBRARY

Cost of Building

12,000 square feet @ $27.00 per square foot	$324,000
Architect's Fee (7.5 percent)	24,300
Equipment	58,300
Landscaping and Site Improvement	15,000
TOTAL	$421,600

Construction costs are based on (1) current experience of Enoch Pratt Free Library and (2) F. W. Dodge construction cost reports.

An arbitrary sum of $15,000 is included for landscaping and site improvement costs. This estimate should be revised when the building site is acquired.

Building cost estimates provide for full air-conditioning.

INITIAL COSTS AND PRELIMINARY BUDGET (1966)

It is strongly recommended that the book collection be acquired and that all operating plans be developed while the building is under construction.

On the basis of experience with more than 30 varied building and organizational projects, it can be assumed that it will take from 10-12 months to prepare for full library service. Therefore, every effort should be made to coordinate preparatory work to coincide with completion of the building.

The preliminary budget, including certain initial costs, follows:

Staff		
Professional		
CCSA Administrator	$ 10,500	
Community Services Librarian II	7,000	
Senior High School Librarian II	7,000	
Junior High School Librarian II	7,000	
Clerical		
Secretary	4,000	
Clerks (2) at $3,600	7,200	
Fringe Benefits - at 6 percent	2,562	
Total Salaries		$ 45,262
Collection (Initial)		
25,000 Books at $5.00 per vol. (includes allowance for processing by contract)	$125,000	
500 Phonograph Records at $4.50	2,250	
Audio-Visual Materials	2,000	
Pamphlets, etc.	1,000	
Total Collection		130,250

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INITIAL COSTS AND PRELIMINARY BUDGET (1966) - continued

Other Expenses

Office Rental - 2,000 square feet at $2.50 per square foot	$ 5,000	
Supplies, postage, etc.	1,500	
Telephone	250	
Travel	750	
Typewriters and small office equipment	1,500	
Office Furniture	2,500	
Audio-Visual Equipment (record player and projectors)	1,400	
Total Other Expenses		$ 12,900
GRAND TOTAL		$188,412

BUDGET FOR FIRST YEAR OF OPERATION (1967)

(Service Area 12,000-15,000 Population)

Staff

Professional		
CCSA Administrator	$ 10,920	
Community Services Librarian II	7,280	
Community Services Librarian I	6,000	
Senior High School Librarian II	7,280	
Senior High School Librarian I	6,000	
Junior High School Librarian II	7,280	
Junior High School Librarian I	6,000	
Clerical		
Audio-Visual Technician	$ 4,800	
Secretary	4,160	
3 General Clerks (1 at 3,600; 2 at 3,744)	11,088	
Pages and Part-time	2,000	
Fringe Benefits - at 6 percent	4,368	
Total Salaries		$ 77,176

Collection

Books (includes processing allowance)	$ 16,500	
Junior High $4,000		
Senior High 5,000		
Community 7,500		
120 Periodical Subscriptions at $6.00	720	
Newspaper Subscriptions	225	
100 Phonograph Records at $4.50	450	
Audio-Visual Materials at $3.00 per student	5,400	
Pamphlets, etc.	1,000	
Total Collection		24,275

Other Expenses

Janitor Service	$ 4,300	
Utilities and Building Supplies	4,500	
Supplies, postage, etc.	1,200	
Travel	1,000	
Insurance	1,000	
Furniture and Equipment	750	
Total Other Expenses		12,750
GRAND TOTAL		$114,201

BUDGET FOR SECOND YEAR OF OPERATION (1968)

Staff

Professional		
CCSA Administrator	$ 11,357	
Community Services Librarian II	7,572	
Community Services Librarian I	6,240	
Senior High School Librarian II	7,572	
Senior High School Librarian I	6,240	
Junior High School Librarian II	7,572	
Junior High School Librarian I	6,240	
Clerical		
Audio-Visual Technician	4,992	
Secretary	4,326	
3 General Clerks	11,542	
Pages and Part-Time	2,100	
Fringe Benefits - at 6 percent	4,545	
Total Salaries		$ 80,298

Collection

Books (includes processing allowance)	$ 16,500	
120 Periodical Subscriptions	720	
Newspaper Subscriptions	225	
100 Phonograph Records	450	
Audio-Visual Materials	5,400	
Pamphlets, etc.	1,000	
Binding and Rebinding	2,000	
Total Collection		26,795

Other Expenses

Janitor Service	$ 4,400	
Utilities and Building Supplies	4,500	
Supplies, Postage, etc.	1,200	
Travel	1,000	
Insurance	1,000	
Furniture and Equipment	750	
Total Other Expenses		12,850
GRAND TOTAL		$119,943